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" * * * Whatever they (Americans) have enjoyed in their proverbial pursuit of happiness is owed to large populations of healthy farm animals which disease would quickly diminish to a dangerous level but for the watchful labors of the veterinary service.

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Healthy Livestock Are Essential for Maximum Food Production

A message to the American Veterinary Medical Association from Claude R. Wickard, Secretary of Agriculture

The farmers of this nation are being asked to produce more food in 1943 than ever before in history. Their goals include vast quantities of meat, milk, and poultry products. To help meet these goals, and thus strengthen our war effort, all of us who are concerned with food production realize the importance of doing everything possible to protect and maintain the health of our livestock.

This job, right from the start, calls for full use of the services and facilities of the veterinary medical profession. From my own experience as a farmer, I know and appreciate the help of veterinarians, through the years, in building up and maintaining our livestock resources; and from recent expressions I have received I know of your present desire to aid in the food program. In many ways, as in the past, your services will continue to be essential to the task of carrying out our tremendously expanded program of livestock production.

First of all, our food needs indicate the necessity for conserving and improving the productive capacity of all livestock—particularly breeding stock—so that animals marketed for slaughter may be readily replaced. This will involve not only the protective measures for which we look to your profession, but also continued aggressive action against all injurious animal diseases and parasites, and the encouragement of good hygiene and sanitation.

In the feeding and care of livestock, certain readjustments are likely to be necessary. These will include changes in rations as result of shortages of some feeds and the use of substitutes. Where these changes cause nutritional disturbances, increased veterinary attention often will be needed.

Swine Sanitation System Important

The familiar swine sanitation system, based on veterinary research some years ago, has been a great asset in increasing the efficiency of hog production. My own observation and available reports indicate that it is being followed by at least half of the country's hog producers. On farm visits, veterinarians can aid the pork-production program by explaining to those unfamiliar with the sanitation system its principles and benefits.

Both in cattle raising and dairying, the prevention of abortion is essential to maximum production. For that reason, the control of brucellosis is a project that merits full veterinary and public support. Another essential is tuberculosis eradication. The efforts of past years, which have suppressed this disease so effectively, are one of the reasons for the current high level of production. In view of the heavy losses of beef and leather caused by the cattle grub, there is need for aggressive action against this pest. A relentless drive

also should be carried on against the nodular worm of sheep because of the damage this parasite causes to the intestines needed for surgical sutures, and because of its injurious effects on meat and wool production.

HORSEPOWER EXTENDS MANPOWER

Horses and mules have gained importance in the food program as a result of rubber and gasoline shortages. Keeping work stock up to par, especially during the critical crop-growing and harvesting periods, is another wartime responsibility that veterinarians share with farmers. The progress of recent years in controlling sleeping sickness of horses by vaccination is an example of the protection of work stock by the veterinary medical science. Remember that horsepower is a means of extending manpower.

I have noted with satisfaction the growing interest of the veterinary profession in poultry production and the help veterinarians have provided in reducing losses from the diseases of poultry. As you know, many efficient small food-producing units, such as poultry, produce in the aggregate a vast quantity of products. It is of great value to the national food program, therefore, to do everything possible to help keep the flocks thriving. And when a poultry disease, such as avian tuberculosis, is known to endanger hog production also, the service of veterinarians in guarding poultry health increases in importance.

Cotton Fat and Cotton Fiber

Cornbelt farmers are no longer scolding their neighbors in the South for flooding the market with cottonseed to the detriment of northern crop prices. It now pays to raise cotton for the fat cottonseed contains. Cottonseed is in greater demand for oil than for fiber, and besides, the shortage of jute from the Far East has created considerable demand for low-grade cotton, once a drug on the market. In fact, the tables have turned. Instead of deploring the influx of cottonseed into the stock-feeding regions, farmers are looking southward for feed they may not get.

Milk-Borne Epidemic of Brucellosis

THE MARCUS (Iowa) epidemic[1] of brucellosis, proved to be of swine origin, is the theme of an article in a current issue of the *Journal of the American Medical Association*.[2] This epidemic was the subject of a brucellosis conference held in Council Bluffs, June 23, 1942, at which J. A. Barger, inspector-in-charge of the federal Bureau of Animal Industry in Iowa, and C. C. Franks, Iowa's chief veterinarian, were among the principal speakers. An article by Dr. Franks[3] speaks of the cooperation of the public health and veterinary services in running down the source of the Marcus[3] epidemic. The investigation proved the epidemic to be an instance of swine infecting dairy cows, which in turn infected the town population through the drinking of raw milk. While the hog to cow to man source of undulant fever may not be new, we believe this to be the first human outbreak of the kind in which the chain was scientifically established. The article[2] reveals that, of the population of 1,200, one or more members of 57 families showed either clinical illness or agglutination. Multiple cases occurred in 15 homes and affected 77 persons, 44 males and 33 females ranging from 7 months to 71 years of age. The reactions obtained from brucellergen (Huddleson) in 266 persons were 18 per cent for *Brucella abortus* and 22.9 per cent for *Brucella suis*.

The clinically sick were treated with 1 cc. doses of brucellin (Huddleson) in repeated doses averaging 15 for the group. Sulfonamides were used sparingly owing to the tendency of all of the patients to show some degree of secondary anemia.

The duration of the febrile stage was six to eight weeks. None died. One woman aborted during the fifth month of gestation. The authors are in agreement that isolation of Brucella in the blood stands first as a diagnostic aid.

[1]August and September, 1941.

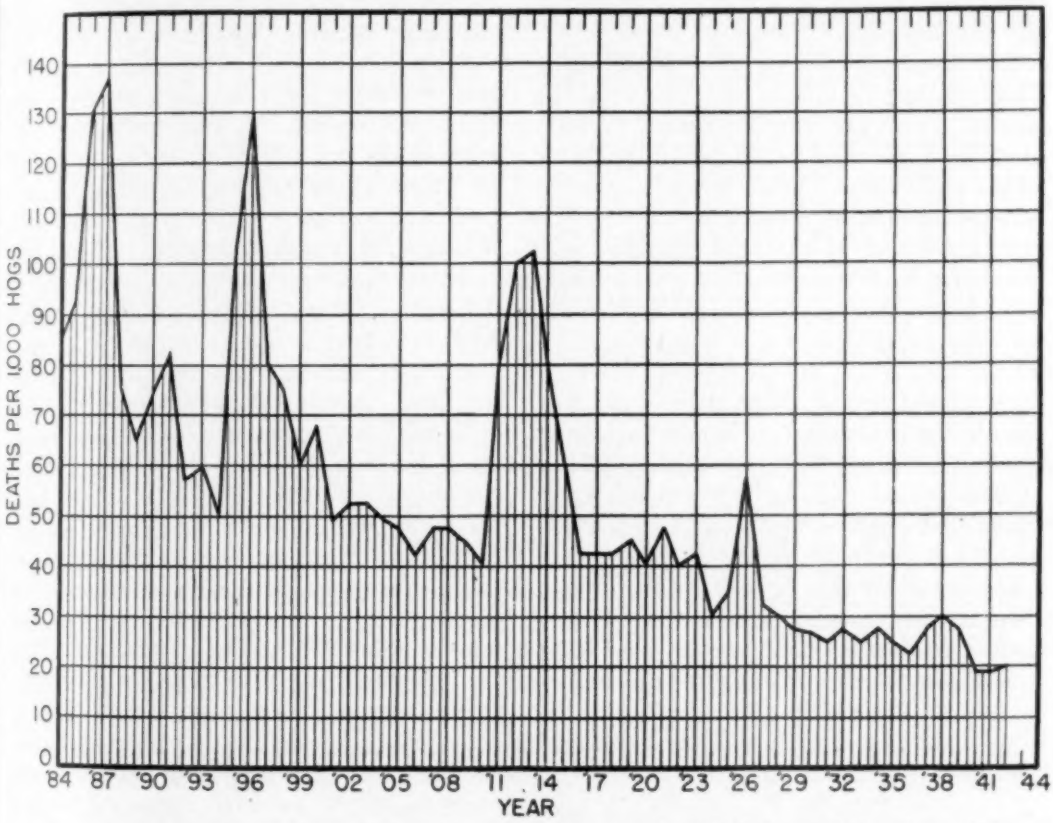
[2]Boyts, L. H., M.D., Harris, D. M., M.D., Joynt, M. E., M.D., Jennings, J. R., B.A., and Jordon, Carl F., M.D.: A Milk-Borne Epidemic of Brucellosis. J.A.M.A., *121*, (Jan. 30, 1943): 319-322.

[3]Franks, C. C., D.V.M.: Brucellosis in Iowa. J.A.V.M.A., *101*, (Oct. 1942): 254-255.

History of an Achievement: The Mastery of Hog Cholera

To CONTEMPLATE a United States as of 1943, had hog cholera not been mastered, is an excellent way of estimating the debt owed to veterinary science and to the personnel engaged in its application. The contemplation brings to mind the recommendations of the Special Committee on Swine Diseases published in the March issue of the JOURNAL in respect to the never-ceasing studies, practices, and warnings of the animal doctors concerning the vulnerability of the "food-producing machinery" to neglect, carelessness, or exploitation, and to the detailed attention required to insure its successful operation. Needless to repeat here that the people's food supply hangs on a thread that is either weak or strong, depending upon the wisdom shown in the handling of disease.

From the Office of War Information comes an historical sketch on hog cholera illustrating that contention—a sketch that should arouse interest in the part played by the veterinary profession in the country's development and in the rôle it now plays in the clamor for food as the war goes into a more and more critical phase. Dr. William M. MacKellar, principal veterinarian in charge of hog cholera for the United States Bureau of Animal Industry, puts hog-cholera data in order as it was never done before. Had the veterinary service, since 1884, done nothing but control this one disease of this one genus of livestock,



Graph 1—Estimated death losses of hogs from hog cholera in the United States during the period shown—1884-1942. [To the actual value of the hogs lost, incomputable hours of lost effort, despair, discouragement, bankruptcy, mortgages may be added to the onetime hog-cholera tragedy of the American farmer.]

the total sum expended in its maintenance for the fifty-eight years is a bagatelle compared with the advantage of having conquered the virus of hog cholera.

The annual mortality of hog cholera is less than one fifth of what it was twenty years ago and about one tenth of the average losses suffered by swine breeders from 1884 to 1914. Though money, just now, is less important than things to eat, the figures in dollars lost through hog cholera and dollars saved through its control range among the unbelievables.

The accompanying graph, based upon Chief Mohler's report, tells, silently, the history of a great achievement brought about by Bureau scientists beginning in the 1890's and culminating in the refinement of serum-virus vaccination during the first and second decades of this century. Salmon's work of the 1890's was the cue to look beyond a bacillary cause and led to the historic discovery of the now conquered virus by Dorset, Niles and McBryde. Here, is perhaps the proper place to re-emphasize that if the production of more food by the raising of more farm animals *is* mathematical, it was made so only through calculating that diseases such as hog cholera will be kept under control, and not flare up and upset the program.

In recent years, MacKellar states, hog cholera has occurred in nearly every state, with the main hog-producing states suffering most. The figures given on the number of outbreaks reported to the Bureau in 1942 are:

Iowa	1,421	No. Carolina	470
Illinois	578	Florida	364
Ohio	417	Others, *q. s.*	5,800

The graph shows that hog cholera was rampant during 1886-1887, 1895-1896, and 1912-1913, and many veterinarians of the Cornbelt will recall the tragedy of 1926—the last flare-up which is important in the history of the disease because it came long after the perfect method of prevention had been made available and at a time when serum producers as a whole, primed for low production, were caught short* and the Bureau reluctantly permitted the producers to shorten the long, delicate process of quality serum and virus production. Since 1926, as if a lesson had been taught to the swine producers and as the graph shows, the hog-cholera incidence has been gradually downward. The low incidence for 1941 and 1942, which were years of unprecedented effort to produce more food, is nothing short of a glorious credit to the coöperative spirit developed between critical serum producers and watchful veterinarians. Quoting OWI:

"Veterinarians of the Bureau of Animal Industry point out that the familiar serum and virus treatment is effective in preventing hog cholera and they advise its use in all areas where outbreaks of the disease have occurred in recent years. Immunization against hog cholera is advised also for valuable breeding stock and for garbage-fed swine. Hogs shipped interstate from public stockyards to rural areas for further feeding or breeding are regularly immunized before leaving the stockyards.

Under the Virus-Serum-Toxin Law which the Department of Agriculture administers, the quality of anti-hog-cholera serum, hog-cholera virus, and other veterinary biological products, is protected by official veterinary supervision of their manufacture. A further aid in the situation is a serum marketing agreement, also administered by the Department, which includes provisions for stabilization of prices and maintenance of reserve supplies for use in emergencies. On May 1 of each year each manufacturer must have on hand a supply of serum equivalent to at least 40 per cent of his previous year's sales.

Hog cholera is highly fatal and tends to spread most rapidly in areas where swine are numerous. A high standard of sanitation helps to reduce chances of infection, as does also a self-imposed quarantine to exclude infection from outside sources. The segregation, for several weeks, of any new swine brought onto premises is especially

*The shortage of serum and virus which caused heavy losses in 1926 is now prevented by an official, regulatory command.

desirable. When an outbreak of hog cholera appears on a farm or nearby, veterinary assistance should be obtained immediately. Information concerning the prevention and control of hog cholera is available from the U. S. Department of Agriculture and through state extension services."

The JOURNAL seizes the opportunity of placing this graph on record in the archives of the veterinary profession not only for future guidance, but also for the impression this OWI release will make on the minds of the more thoughtful American who, sooner or later, must learn that but for this type of disease control among animals of the farm there could be no abundance of food. The production of food-producing animals embraces more than the mere will to do so.

Notwithstanding our free schools of many years, there are 16 million illiterates in the United States over 10 years old, according to the American Association of Adult Education of New York City. The figures are based upon CCC and Army requirements, which define literacy as the ability to read and write as well as a fourth-grade child. Grammar school scholars who stop reading and writing after they quit school become illiterate adults, just as a veterinarian who quits studying after graduating soon becomes a glorified quack.

Cliff D. Carpenter Named to Head Poultry Viability Program of the USDA

The U. S. Department of Agriculture announced on March 5, 1943, that Cliff D. Carpenter has been named by Chief John R. Mohler to head a program on poultry disease reduction for the Bureau of Animal Industry. Dr. Carpenter, poultry pathologist and in charge of educational work on nutrition and disease control in poultry and livestock for Allied Mills, Inc., for several years, was drafted by the government and named "Collaborator in Poultry Viability" to be in charge of directing and coördinating a representative, all-poultry industry committee that will formulate and carry out plans to reduce mortality.

Cliff D. Carpenter

Dr. Carpenter will coöperate with poultrymen, veterinarians, extension workers, and educators in the poultry field, and others interested in control of poultry diseases, and will devote special attention to reducing mortality in laying flocks. He will also work with coördinators of the National Poultry Improvement plan on control and eradication of pullorum disease, and on hatchery and breeding-flock sanitation. In making the announcement, Dr. Mohler pointed out that effective reduction of mortality of adult and growing fowls is one of the quickest ways to increase our supplies of poultry meat and eggs.

The movement to create an all-poultry industry committee on poultry viability grew out of realization by industry leaders and USDA officials that, in order to attain the 1943 poultry production quotas, two things must be done, namely, more chicks started and fewer lost. It was felt that if the present mortality rate in flocks was reduced by only five per cent, 100,000,000 pounds of chickens and 200,000,000 dozens of eggs would be added to the nation's food supply.

The objective of the program is to reach every producer of poultry — farm flocks, commercial flocks, broiler raisers, turkey growers —with timely information that will enable them to reduce mortality. This will be done through poultry papers, farm papers, veterinary journals, weekly papers, daily papers and the radio.

Organization Meeting Held

To launch the program, Chief Mohler invited leaders representing every branch of the poultry industry and related fields to attend an organization meeting in Chicago on March 16 and 17, 1943. The committee and leaders invited to participate in formulating and executing the plan will collaborate with the USDA through Dr. Mohler as chief of the federal bureau of animal industry, and will act in an advisory capacity to Dr. Carpenter. These people will donate their time to the project. The government has made office space available to Dr. Carpenter in Room 905, Customs House, Chicago.

Because of differences in industry condi-

tions and because smaller territories are more easily covered thoroughly, the United States will be divided into seven regions, each with a complete working organization headed by a district director.

THE PROGRAM

At the organization meeting, the viability program was considered under five sections:

1) Chick program from the present time to middle of May.

2) Pullet program, May to July.

3) Laying program, July to fall.

4) Turkey program to fit turkey production schedules.

5) Broiler program to fit broiler production conditions.

Under each program, steps will be taken to help producers solve problems due to shortages of labor, feed, and equipment. The solution to these problems will be presented through articles in the press, radio broadcasts, and direct contact with producers at meetings.

The representatives from various fields invited to attend the Advisory Council Meeting in Chicago on March 16-17 included:

Hobart Creighton, Warsaw, Ind., Chairman, National Poultry Defense Committee.

A. F. Perrin, Chicago, Ill., President, Institute of American Poultry Industries.

E. B. Heaton, Chicago, Ill., Managing Director, Institute of American Poultry Industries.

Reese V. Hicks, Kansas City, Mo., Executive Secretary, International Baby Chick Association.

John G. Hardenbergh, Chicago, Ill., Executive Secretary, American Veterinary Medical Association.

Frank Thorp, Jr., East Lansing, Mich., Chairman, Poultry Committee, AVMA.

Ralph M. Field, Chicago, Ill., President, American Feed Manufacturers Association.

Lloyd S. Tenny, Chicago, Ill., Chicago Mercantile Exchange.

Homer I. Huntington, Chicago, Ill., Manager, Poultry and Egg National Board.

L. E. Card, Urbana, Ill., University of Illinois.

O. V. Brumley, Columbus, Ohio, Ohio State University.

H. L. Shrader, Washington, D. C., Extension Service.

J. Holmes Martin, Lafayette, Ind., Purdue University.

H. R. Smith, Chicago, Ill., National Live Stock Loss Prevention Board.

Charles W. Wampler, Harrisonburg, Va., President, National Turkey Federation.

W. A. Ross, Washington, D. C., Executive Secretary, Future Farmers of America.

Earl Benjamin, New York City, Manager, Washington Coöperative Egg & Poultry Association of New York.

Herbert Beyers, Salt Lake City, Utah, General Manager, Northwestern Turkey Growers Association.

Henry G. Eisert, Chicago, Ill., President, Poultry Publishers' Association.

N. R. Clark, Chicago, Ill., Director, Poultry and Egg National Board.

George Wrightman, Des Moines, Iowa, Executive Secretary, Animal and Poultry Foundation of America, Inc.

Ben Zaffke, Fort Atkinson, Wis., Poultry Equipment Manufacturers.

J. H. Pearson, Washington, D. C., Vocational Agriculture.

Harold F. Williamson, Georgetown, Del., Executive Secretary, Broiler Raisers.

J. Turner Mills, McNabb, Ill., President, International Baby Chick Association.

Mark Welsh, College Park, Md., U. S. Live Stock Sanitary Association.

G. L. Noble, Chicago, Ill., Managing Director, National 4-H Club Committee.

O. B. Kent, Chicago, Ill., American Feed Manufacturers Association.

A. G. Philips, Chicago, Ill., American Feed Manufacturers Association.

John E. Swaim, Chicago, Ill., Secretary, Animal Health Institute.

Lloyd Burlingham, Chicago, Ill., Agricultural Publishers' Association.

W. H. Hendricks, Salt Lake City, Utah, President, U. S. Live Stock Sanitary Association.

J. P. Simons, Ottumwa, Iowa, Federal Bureau of Animal Industry.

Leon Todd, Trenton, N. J., Executive Secretary, Nepco.

Chas. B. Cain, Memphis, Tenn., Feed Service Director, Royal Stafoflife Mills.

Don Turnbull, Kansas City, Mo., Asst. Executive Secretary, International Baby Chick Association.

Wm. R. Archer, Houston, Tex., President, South Texas Feed Company.

Clyde C. Edmonds, Salt Lake City, Utah, General Manager, Utah Poultry Producers.

John R. Lawler, San Francisco, Calif., General Manager, Poultry Producers of Central California.

This whole program has special interest and significance from the veterinary viewpoint because its origins stem in part at least from the work and special report of the AVMA Committee on Poultry Diseases presented early in 1942. This activity was given the title "Recommendations on Increasing National Egg Production—A Veterinary Program to Meet the Present Emergency" and was published in the April (1942) JOURNAL. These recommendations were so well received that over 10,000 reprints were distributed, at cost, throughout the country, an indication of the practical and workable nature of the program.

Dr. Carpenter's selection to head the 1943 program of the Bureau of Animal Industry on poultry viability is ideal. His experience in poultry pathology and disease control work, his wide acquaintance with leaders in all fields of the poultry industry and his broad grasp of the industry's problems serve as outstanding qualifications for the job he has undertaken at considerable personal sacrifice.

Better Roosters for Increasing Poultry Production

Last year the government asked for an increase of 13 per cent in poultry production and got 15 per cent for the asking. But, inasmuch as the increment came from increasing the number of hens, Poultry Husbandman Theodore C. Byerly is out with a plan to obtain still better results by breeding only to superior roosters which is, obviously, the right step in this or any other branch of animal production. In the past, not more than 25 per cent of the roosters had qualified under the U. S. Certified, U. S. Record of Performance, or U. S. Register of Merit standards. It is estimated that if hatcherymen will bank more upon these types of males, next year's crop will mount another 10 per cent. Like paying more attention to the control of diseases and to the main nutritional problems, the selection of "better sires" ranks far above the mere counting of noses.

The Sanitary Corps of the Army

The Sanitary Corps of the Army was established June 30, 1917, as one of the preparatory steps for World War operations. At the close of that war it contained a personnel of 2,895 officers comprising sanitary engineers, bacteriologists, entomologists, biochemists, parasitologists and other groups. Although the present corps has but 400 officers more are being added as the armed forces are increased. These officers are assigned where needed to act as advisers to commanding officers through the medical corps. Except for the Sanitary Engineers, a subdivision under the Division of Preventive Medicine, Medical Department, the officers of the Sanitary Corps have no central organization. Other branches of the Army furnish the enlisted personnel needed to carry out their recommendations on such matters as water supply, mosquito control, sewage, latrines, camp sites, building construction, nutrition, and the many other factors vital to the health of the soldier. The Sanitary Corps is wholly a reserve component of scientific men who work side by side, unseen and unsung, with the officers of the Regular Army—without them the fate of the Army would soon be sealed.

Are Your 1943 Dues Paid?

Attention of members is called to the postoffice regulation requiring discontinuation of Journal mailings to those whose dues remain unpaid after April.

Prompt remittance should be made to avoid interruption in Journal subscriptions.

Prevention and Treatment of Infectious Calf Scours with 'Sulfasuxidine' Succinylsulfathiazole

HARRY W. HERRIOTT, V.M.D.
Hershey, Pa.

INFECTIOUS CALF scours has caused the death of a large number of calves in the dairy herds near Hershey, manifesting itself in several different forms as exemplified in the heard studies herein reported.

In herd A a virulent, acute type of the disease has resulted in over 50 per cent mortality of all the calves born during the past several years. In herd B a less acute type of the disease is present but still the mortality is over 25 per cent. In herd C a high mortality was noted in the animals affected with the disease, while herd D presented a low mortality but high morbidity.

Most all of the commonly recommended methods of control and treatment have been tried in these herds. Although the results in some cases were encouraging, they were not sufficiently effective to adopt as permanent measures.

Poth *et al.*,[1] at the Johns Hopkins University have been searching for a sulfa compound with intestinal antiseptic properties combined with low absorption and minimum toxicity. Their investigations led them to select "sulfasuxidine" succinylsulfathiazole as the compound of choice. They found that this drug in doses of 0.5 to 0.25 Gm. per kilogram of body weight per day was effective in reducing the coliform organisms of the intestinal fllora from a normal of 10,000,000 to less than 1,000 per Gm. of wet stool. They also showed that massive doses could be given to dogs over long periods of time with safety. During such trials only a low concentration of the drug developed in the blood stream, and no toxic signs were observed. The dogs would eat well, gain weight, and were active. Their stools became semisoft and practically odorless. Because of these properties, we decided to try the drug in infectious calf scours. The following is a report of the clinical investigation.

Herd A.—This herd consisted of 27 head of Holstein-Friesian cows. During 1940 and 1941, prior to the prophylactic treatment of the calves with "sulfasuxidine" succinylsulfathiazole, approximately 50 per cent of the calves were lost as a result of calf scours. At birth the calves appeared normal and healthy. They were active, had good appetites, and would suckle without difficulty. In some cases, the first symptoms were noted as early as 12 hours after birth. Often they were found dead within the next 12 hours, usually between 24 and 36 hours after birth. The symptoms were a profuse fetid diarrhea, loss of appetite, rapid dehydration, extreme weakness, and death.

In order to prevent the occurrence of the disease, any prophylactic agent would have to be given within the first 12 hours of life. It had also been observed that the calves which lived through this critical stage rarely developed the disease later. Therefore, in employing a drug as a prophylactic, it would be necessary to administer doses during this susceptible period only, or for about two days.

On Nov. 20, 1941, prior to the use of the drug in this herd, two calves died of the disease in the only two stalls available for calving. No attempt was made to clean or disinfect these box stalls where all of the following cases were born. The first treatment was started 12 hours after birth, but later, because of some peracute cases, it was found necessary to begin treatment as early as the sixth hour after birth to prevent the appearance of the disease.

The dose was based on the weight of the animal, allowing approximately 1 Gm. per kilogram of body weight per day. This was divided into 4 equal doses, and 1 dose ad-

[1]Poth, E. J., Knotts, F. L., Lee, J. T., and Inui, F.: "Bacteriostatic Properties of Sulfanilamide and Some of Its Derivatives," Arch. Surg. xliv (1942), p. 187.

ministered every 6 hours. The desired quantity of the drug was placed in a drench bottle to which was added 1 dr. of sodium bicarbonate and 1 pt. of warm water.

As the drug is soluble in dilute alkali solutions, a drench was made and administered. The herdsman reported that treated calves seemed more active and stronger than any other calves he had observed. A discussion of several of the cases is necessary in order to interpret the results obtained.

After the first eight calves born had been so successfully treated so as to prevent the disease from occurring, it was decided to treat every other calf so that the untreated calves would serve as controls. Also, it was decided to reduce the dosage to see if a smaller dose would prevent the occurrence of the disease.

Case 9, as a control, died within the usual course of the disease.

Case 10 was started on a decreased dosage but because it showed symptoms, the dose was increased to that found effective in the first eight cases. The symptoms subsided and the calf lived.

Case 11, although not treated, lived. It was noted that in previous years during severe outbreaks, an occasional animal would live through the susceptible period and never show any signs of the disease.

Case 12 showed symptoms earlier than normal and although treatment was started immediately, the animal died.

Case 14 was untreated until the disease was in an advanced stage. Because of the value of this particular calf, treatment was administered but the animal died.

Case 15 was a control animal. It survived the early attack but developed a diarrhea eight days after birth. This case was then treated and recovered within three days.

Case 17 was similar to case 15 with the disease developing nine days after birth. This calf recovered after two days of treatment.

Case 19 was left untreated and it died of the typical acute disease.

Cases 13, 16, 18 and 20 were treated prophylactically with excellent results.

Herd B.—This herd consisted of 30

CHART OF HERD B

Calf No.	Weight Lbs.	Date of Birth	Date When Disease Symptoms Appeared	Time When Treatment Was Started	No. of Doses	Dose Rate	Remarks
1	115	1-13-42	2- 1-42	2- 2-42	10	8 Gm. every 6 hrs.	Recovered.
2	95	1-22-42	1-30-42	2- 2-42	11	8 Gm. every 6 hrs.	Recovered.
3	90	1-27-42	2- 3-42	2- 3-42	6	8 Gm. every 6 hrs.	Recovered.
4	85	2-10-42	2-15-42	2-15-42	39	8 Gm. every 6 hrs.	Destroyed as incur.
5	90	2-10-42	2-17-42	2-17-42	16	8 Gm. every 6 hrs.	Recovered.
6	85	2-14-42	2-19-42	2-19-42	12	8 Gm. every 6 hrs.	Recovered.
7	80	3- 7-42	3- 8-42	3- 8-42	13	8 Gm. every 6 hrs.	Recovered.

Summary: 7 cases treated, 6 recovered, 1 destroyed.

CHART OF HERD C

1	60	6-10-42	6-16-42	6-16-42	12	8 Gm. every 6 hrs.	Recovered.
2	60	6-15-42	6-16-42	6-16-42	3	8 Gm. every 6 hrs.	Died following 3rd dose. Disease appeared early and the animal died soon after.
3	65	6- 8-42	6-10-42	6-10-42	4	8 Gm. every 6 hrs.	Recovered but relapsed in 6 days.
			6-16-42	6-16-42	12	8 Gm. every 6 hrs.	Recovered.
4	68	6- 7-42	6-17-42	6-17-42	11	8 Gm. every 6 hrs.	Recovered.
5	60	6- 7-42	6- 8-42	6- 8-42	8	8 Gm. every 6 hrs.	Apparently recovered, relapsed.
			6-16-42	6-16-42	25	8 Gm. every 6 hrs.	8 days but recovered.

Holstein-Friesian cows. Calf scours had been a problem in this herd for several years with approximately 25 per cent mortality. The disease in this herd usually appeared when the calves were from 5 to 7 days old. The course of the disease was considerably longer than that in herd A. However, the type of infection seemed highly infectious and severe. Out of a total of seven cases treated only one was classed as incurable, while the other six cases made complete recoveries.

Herd C.—This herd consisted of 30 Guernsey cows. During 1941, a highly infectious form of calf scours was present. The disease usually affected the calves during the first week of their life. It resulted in a mortality of over 90 per cent of the calves affected. Until June, 1942, little or no trouble was encountered. Then 8 cows calved with 5 of the calves developing scours. The results of the treatment of these 5 cases are shown in chart of herd C.

ing these cases with a new drug, "sulfasuxidine" succinylsulfathiazole.

In the acute form of the disease, where a high percentage of deaths occurred, 13 calves were treated prophylactically without the appearance of the disease. Of 6 control calves, 3 developed the typical disease and died while 1 calf showed no signs of illness. The 2 others developed symptoms a week after the usual critical period, were treated, and recovered uneventfully.

In 3 other herds, 16 calves developed symptoms of infectious calf scours. These were treated after symptoms had developed. Three cases resulted fatally, two of which were in a critical condition when treatment was started.

In general, calves treated with "sulfasuxidine" succinylsulfathiozole, responded promptly. The symptoms subsided and the calves did not appear to be set back as when treated with other common remedies.

The results of this study would indicate promise of an effective agent for the prevention and treatment of infectious calf scours. Only after complete and extensive toxocologic and bacteriological studies have been conducted on calves can more definite conclusions be drawn.

CHART OF HERD D

1	60	12- 3-41	12-13-41	12-23-41	4	8 Gm. every 6 hrs.	Died: Twin of No. 2.
2	60	12- 3-41	12-13-41	12-23-41	12	8 Gm. every 6 hrs.	Recovered.
3	90	12-12-41	12-18-14	12-23-41	12	8 Gm. every 6 hrs.	Recovered.
4	95	12- 8-41	12-20-41	12-23-41	12	8 Gm. every 6 hrs.	Recovered.

Calf number 1 was prostrated at the time treatment was started, which was ten days after the first symptoms. It was not drinking and showed lesions of necrophorous infection of the mouth and throat.

Herd D.—This is another Holstein-Friesian herd of 30 cows where calf scours is quite troublesome. These cases usually respond to common remedies such as bismuth preparations and sulfocarbolates. The disease usually appeared when the calves were 10 days to 2 weeks old. This probably accounts for the low mortality. However, the affected calves were usually set back severely, which accounted for their smaller size and poorer condition. Four cases showing severe symptoms for several days were treated with good results.

SUMMARY

Serious losses resulting from calf scours have been encountered in several herds. A varying degree of virulence of the disease was observed in the different herds. This is a report of the results obtained by treating these cases with a new drug, "sulfasuxidine" succinylsulfathiazole.

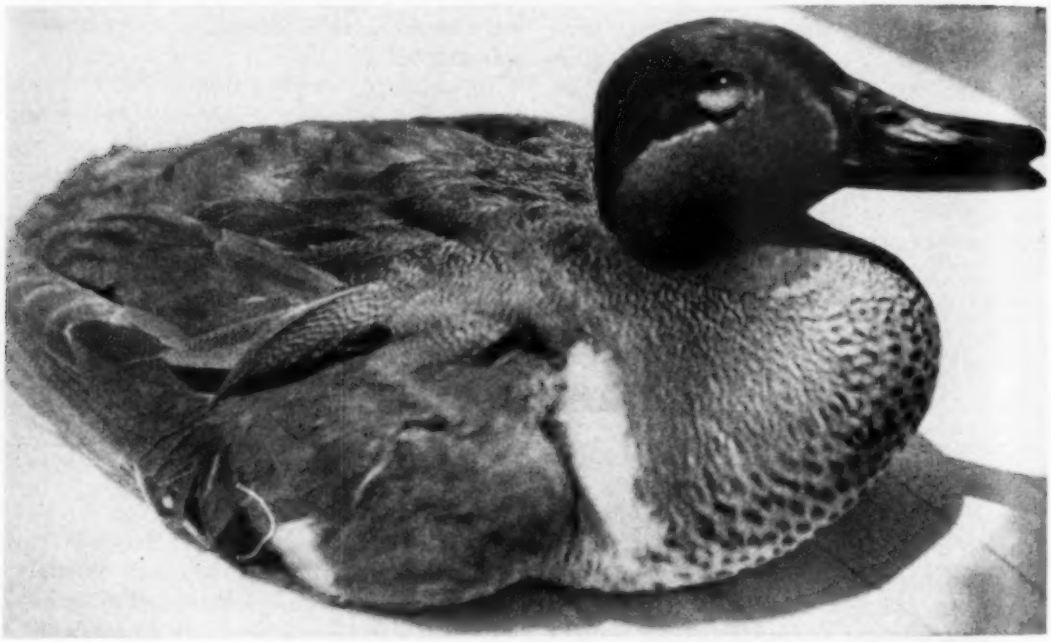
The "Sulfasuxidine" succinylsulfathiazole used in this study was furnished by the Medical-Research Division, Sharp and Dohme, Philadelphia, Pa.

Changes in the pH of semen in either direction do not alter the sex ratio of animals born, as was once so assuredly declared in premature reports to the effect that raising males or females at will was merely a matter of acidulating or alkalizing semen. Trials conducted by McPhee and Eaton, of USDA, on rabbits and pigs proved that the ratio cannot be significantly modified that way.—*From Journal of Animal Science, November, 1942.*

Detection of Botulinus Toxin in the Blood Stream of Wild Ducks

E. R. QUORTRUP, D.V.M., AND R. L. SUDHEIMER, B.S., D.V.M.
Brigham, Utah

IN LINE with intensive studies on western duck sickness or botulism being conducted at the Bear River Wildlife Disease Research Station, an investigation concerning the occurrence of toxin in the blood stream of ducks affected by botulism was recently made, results of which are herewith presented:



Green-Winged Teal Displaying Typical Symptoms of "Western Duck Sickness," Now Known to be Botulism.

Hobmaier,[1] working on duck sickness in California, has demonstrated the presence of toxin in whole duck blood inoculated into mice, but does not indicate the duration of its presence. More recently, Hazen,[2] working with type E toxin, found that it could be demonstrated in chicken blood regularly 48 hours after subcutaneous injection, sometimes after 75 hours, but never 96 hours after injection. Our work with type C toxin checks closely with her findings.

Our preliminary tests were made on a few Pintails and Widgeons collected in the field displaying typical symptoms of botulism. The blood was centrifuged immediately after being collected and the serum inoculated intraperitoneally into 20 Gm. mice in 0.5 and 1.0 cc. amounts. The mice receiving 1.0 cc. died within 12 hours and those receiving 0.5 cc. died within 24 hours, all displaying typical symptoms of botulism. Controls were inoculated with the same amounts of serum and 150 units of botulinus antitoxin type C. All the mice receiving the protecting antitoxin remained normal.

From the Bear River (Utah) Wildlife Disease Research Station, USDI; senior author in charge.

[1]Hobmaier, M.: Conditions and Control of Botulism in Waterfowl. Calif. Fish and Game, xviii, (1932).

[2]Hazen, Elizabeth L.: Differential Characters of Two Strains of Clostridium Botulinum, Type E: Action of Toxin in Chickens. Proc. Soc. Exp. Biol. Med., 1 (May 1942), pp. 112-114.

TABLE 1.—Results of Intraperitoneal Injection into Mice of the Blood Serums of Ducks Naturally Afflicted with Type C Botulism.

SPECIES	DEGREE OF SICKNESS	DOSE OF BLOOD SERUM	INOCULATED MOUSE DIED IN HOURS
Green-winged Teal	Prostrate	1 cc.	12
Pintail	Prostrate	1 cc.	24
Pintail	Prostrate	1 cc.	12
Pintail	Prostrate	1 cc.	12
Pintail	Severely affected n.m.p.*	1 cc.	12
Pintail	Severely affected n.m.p.	1 cc.	12
Pintail	Severely affected n.m.p.	1 cc.	60
Shoveler	Severely affected n.m.p.	1 cc.	12
Pintail	Slightly affected n.m.p.	1 cc.	24
Mallard**	Slightly affected n.m.p.	1 cc.	45

*n.m.p. = nictitating membrane paralyzed.
**The nictitating membrane of the mallard was not paralyzed.

Identical tests were made on the serum of four normal Mallards which never were exposed to botulism; on one Pintail six days following ingestion of toxin; on two Widgeons and three Pintails fully recovered from botulism; and on one Pintail suffering from lead poisoning. None of the mice inoculated with serums from these birds ever developed symptoms, but remained unaffected after four days of observation.

Following these preliminary tests, 10 ducks collected in the marshes and displaying various degrees of intoxication as outlined below were subjected to the tests just described.

It will be seen that all the inoculated mice died, regardless of the degree of sickness displayed by the ducks, but that there is a tendency for the action to be faster in the serums from the more severely affected birds.

Desiring to know the more exact period during which botulinus toxin can be demonstrated in the blood stream, a number of ducks were fed toxin in varying amounts to suit the purpose. For detection a few minutes after ingestion, 10 m.l.d. were used; for demonstration after longer periods, it was, of course, necessary to use doses slightly smaller than lethal. In order to accomplish this, a number of ducks

TABLE 2.—Table Showing the Time after Ingestion by Ducks that Type C Botulinus Toxin May Be Demonstrated in the Blood Stream.

SPECIES	DOSE OF TYPE C TOXIN FED TO DUCKS	TIME TOXIN INGESTED WHEN SERUM WAS COLLECTED		DOSE OF SERUM INJECTED INTO MICE	EFFECT OF SERUM TOXIN ON MICE	TIME REQUIRED FOR SERUM TOXIN TO KILL MICE
	m.l.d.	min.	hrs.	cc.		hrs.
Pintail	10	5	..	1	Lethal	46
Pintail	10	10	..	1	Lethal	36
Pintail	10	20	..	1	Lethal	18
Pintail	10	30	..	1	Lethal	6
Pintail	10	..	1	1	Lethal	6
Pintail	5	..	2	1	Lethal	24
Pintail	5	..	6	1	Lethal	18
Pintail	2	..	25	1	Lethal	12
Pintail	2	..	34	1	Severely affected	20
Pintail	2	..	46	1	Lethal	40
Pintail	1	..	52	1	Moderately affected	Remained affected at 96 hrs.
Pintail	1	..	68	1	Lethal	48
Pintail	1	..	80	1	Negative	Negative after 96 hrs.
Pintail	1	..	144	1	Negative	Negative after 96 hrs.

were given 1 m.l.d. Due to individual variability, some of these would die before the desired time, but others would remain severely affected until a test could be made at the proper time.

It will be seen that botulinus toxin could be demonstrated in the blood stream as soon as 5 minutes following ingestion and as late as 68 hours, but not after 80 hours. It should be noted that the strongest concentration of toxin existed in the blood stream 30 minutes to 1 hour after ingestion, as indicated by the time required to kill mice.

SUMMARY

Botulinus toxin was demonstrated in duck serums from naturally affected birds, as well as from birds fed varying amounts of toxin. The toxin was neutralized by type C antitoxin. This test offers a positive means of diagnosis, as well as of typing without culturing.

Toxin was detected in the blood stream as late as 68 hours, but not as late as 80 hours following ingestion. This finding apparently makes it possible to determine (within three days) when toxin was ingested, which should be of high importance for field workers investigating the ecology of western duck sickness. By closely observing the death rate of inoculated mice, it may be possible to determine the time of ingestion more accurately. The amount of toxin ingested must of course be taken into consideration, and this factor obviously cannot be determined in the field.

National Associations: British and American

Like the American Veterinary Medical Association, the National Veterinary Medical Association of Great Britain and Ireland is a federation of constituent societies. The British veterinary-medical federacy includes most of the societies of the imperial colonies, and some of the dominions. It is divided for administration into five branches: North of England, South of England, Welsh, Scottish, and Irish, each consisting of a number of sections comparable to American local associations. The difference is that our constituent associations (state, army, BAI) are not rooted officially into the local organizations—an arrangement that remains to be developed in North America in the interest of solidarity and affluence. Societies of Canada, though of a British dominion, are units of the AVMA. Mexico and Cuba have never applied for representation, although members in those countries are eligible for memership on the Executive Board and have full right of franchise.

The British national association has the advantage of having a central examining board—the Royal College of Veterinary Surgeons, founded in 1844—to pass upon the qualifications for admissions to the veterinary profession in contradistinction to our forty-eight state boards, each functioning under different laws. However, in the United States, centralization of authority is somewhat achieved by the federal examinations for "accredited veterinarians" and by the educational standards, recognized by the AVMA, which serve as a voluntarily accepted guide for the several state examining boards. Steps to establish a national examining board for veterinarians comparable to the Royal College of Veterinary Surgeons and to the national examining boards for physicians and dentists in this country, are in the offing.

Among the unfinished work on our agendum is (1) affiliation of local associations with constituent (state) associations, (2) establishing a national board of examiners, (3) eternal vigilance over the educational system, and (4) promoting research within the profession and under its guidance. There are tasks unfinished in these respects in the English speaking countries, now that the work of the veterinary profession is becoming better understood in the science of government.

Physicians warn against the refilling of prescriptions containing "sulfa" drugs. Many deaths are caused that way.—*From Pathfinder.*

Supplemental Report on the Treatment of Streptococcic Mastitis with Tyrothricin

F. E. MARTIN, V.M.D.
West Chester, Pennsylvania

THE HERD USED in this study was composed of mature cows bought at about the height of their production. Udder troubles have been a serious problem for several years, and at the time this study was started three cases of clinical mastitis were noted. No attempt was made to select cases; all the infected cows were treated and reported. Segregation of infected animals was not possible on this farm, but the milking of infected cows last was advised.

Diagnosis.—The diagnosis was made by microscopic examination of films prepared from incubated samples from individual quarters. Samples of fore milk were collected in sterile tubes containing 0.5 cc. of equal parts of brom-cresol purple 0.5 per cent and sodium azide[1] 1:500. The samples were incubated, in an inverted position, for 18 hours at 37.5 C., and the amount, color, and consistency of the sediment noted. Films were prepared by removing the stopper and touching a thin film of the sediment to a glass slide. The films were then dried, stained with Newman's stain, and examined for the presence of long chain streptococci. At least two consecutive positive reactions were obtained on each quarter before treatment was started. At least two consecutive negative biweekly tests were obtained after treatment before the case was classified as cured.

Material used.—A 50 per cent mineral oil emulsion containing 1.5 mg. of tyrothricin[2] per cc. was used in all quarters found to be shedding long chain streptococci.

Method.—Following a complete milking of an infected quarter, the udder was washed and dried and the end of the teat cleansed with sterile cotton and rubbing alcohol. A glass syringe with a blunt cannula was used to inject 20 cc. of the emulsion. The quarters were gently massaged following the injection. The treated quarters received no more attention until the next milking period when they were milked out and the secretion discarded. In one week, individual quarter samples were again examined and if still positive the treatment was repeated. This procedure was followed until the case was cured or the cow sold. In refractory cases, the examinations and treatments were continued during the dry period at biweekly intervals, and some apparently hopeless cases have responded to treatment during this period. Special efforts are made to have cows with refractory quarters stand dry for two months.

DISCUSSION

In my previous report,[3] I made some use of composite samples. I have since discontinued the use of composite samples for the following reasons. In some cases the number of streptococci will be greatly reduced but not entirely eliminated. When such a sample contains considerable staphylococci, it is sometimes very hard to find any streptococci, but the high leucocyte count will indicate infection. If one part milk, from a quarter with a very light infection, is diluted with three parts of normal milk, the possibility of overlooking the infection is greatly increased as under these conditions the high leucocyte count may not be apparent.

Of some 10 herds in which I have used

[1]Little, R. B., Dubos, R. J., and Hotchkiss, R. D.: Gramicidin, Novoxil and Acriflavine for the Treatment of the Chronic Form of Streptococcic Mastitis. J.A.V.M.A., xcviii (Mar. 1942), pp. 189-199.

[2]Tyrothricin furnished for investigational purposes by the Medical Research Division of Sharp & Dohme, Inc., Glenolden, Pa.

[3]Martin, F. E.: The Eradication of Streptococcic Mastitis by Treatment with Tyrothricin. J.A.V.M.A., ci, (July 1942), pp. 23-25.

tyrothricin, this one shows the lowest percentage of cures. It shows the treatment at its worst. It is my opinion that the relatively poor showing in this herd was due to the fact that all the cows were purchased as mature animals and, therefore, most of the cases were of long standing.

TABLE I.—The Following Tabulation Shows Results of Treating Individual Cows.

Cow	Quarters Infected	Quarters Cured	Total Treatments	Total Laboratory Examinations
A-3	1	1	1	29
A-4	1	0	2	46
A-6*	4	3	30	63
A-8**	2	2	13	47
A-9	3	2	12	59
A-10	1	1	11	47
B-2	1	1	7	44
B-4	1	0	4	30
B-7	1	1	11	50
B-8	1	1	1	30
B-10	4	3	37	53
C-2	1	1	1	12
C-6	1	0	2	30
C-9	2	2	4	39
D-5	4	2	17	50
D-6	2	2	9	37
D-7	4	2	8	47
D-9	3	0	15	47

Number of cows in herd—28.
Number of infected cows—18 or 64%.
Number of infected quarters—37 or 33%.
Treatments per quarter cured—7.7.
Number of quarters cured—24 or 65%.
Number of cows completely cured—9 or 50%.
*This animal had many subacute attacks before treatment.
**This animal had two shrunken quarters that responded and have remained negative for over six months. Production from these quarters is, of course, reduced.

In contrast, the herd that gets its replacements by raising heifers will have a higher percentage of recent infections which more often respond to a single treatment.

I do not know how to select cases that are likely to respond to treatment. Some cows with a history of repeated attacks and with visibly shrunken udders became sterile and remained so. Some cows with only latent infection and no record of clinical mastitis failed to respond to repeated treatment. However, in this herd, the cows with three or four infected quarters all failed to make complete recoveries, and the cows with shrunken quarters did not come back to their full flow of milk, even though they became sterile.

SUMMARY AND CONCLUSION

In a herd of 28 cows, 18 were found to be shedding long chain streptococci from 37 quarters.

Diagnosis was made by the incubated film technique using individual quarter samples, exclusively.

Treatment consisted of instilling emulsion of tyrothricin into the infected quarters and repeating as indicated.

Of 37 infected quarters, 24, or 65 per cent, were cured and have remained negative for periods ranging from two to eight months.

Diagnosis by incubated films made from composite samples was often misleading.

Septic Sore Throat in an Army Camp

An outbreak of septic sore throat in a western army camp among troops from various parts of the country totaled 341 cases among some 3,000 men. There were but few severe cases and none died. Sulfonamide therapy was employed. There was a striking lack of complications. Although the excellent results obtained are not attributed to the "sulfa" treatment since others have not found it particularly effective in this type of streptococcic infection, it certainly played a part in reducing the severity of the attacks.

The importance of this report in veterinary medicine is that the infection was not milk-borne. The cause was an unknown common carrier since there was no person to person spread. [*Arthur L. Bloomfield, M.D., and Lowell A. Rantz, M.D.: An Outbreak of Streptococcic Septic Sore Throat in an Army Camp. J.A.M.A., 121, (Jan. 30, 1943): 315-319.*]

Out of 1,070,000 selectees and volunteers examined for the military forces, there were 48,500 cases of syphilis registered. The rate for whites was 18.5 per thousand and for Negroes, 21.2 per thousand—*J.A.M.A., June 28, 1941, p. 2859.*

Food, Drug and Cosmetic Act from a Veterinary Standpoint

R. S. COOLEY, D.V.M.
Denver, Colorado

THE PRESENT or new Food, Drug, and Cosmetic Act of 1938 supersedes the Food and Drug Act of 1906 which many of you knew as the Pure Food Law. It enforces five federal acts designed to promote purity and truthful labeling in certain commodities essential to the public health and to the economic welfare of the nation. Many states are adopting it as a model in revising their food and drug control laws.

Effective enforcement of the new Act protects consumers of foods, drugs, and cosmetics from products that may be injurious to health, that are filthy or decomposed, short in weight or volume, falsely labeled as to identity, quality, quantity, therapeutic or nutritional efficacy, that are misrepresented in their labeling in any other particular, or that are adulterated in any manner whatsoever. The Act applies to all foods, drugs, medicines, and therapeutic devices for man or animals, and to cosmetics that are offered for entry into the United States or shipped in interstate commerce. A secondary purpose of the Act is to protect honest manufacturers who put out unadulterated, truthfully labeled products in full compliance with the law from competition with debased, sophisticated, or falsely labeled products.

Other acts enforced by the Food and Drug Administration include the Tea Importation Act, the Caustic Poison Act, the Filled Milk Act, and the Import Milk Act.

The Food and Drug Administration works in close coöperation with state, municipal, and other agencies engaged in the enforcement of similar laws, through cooperative programs of work and systematic exchange of information, thus providing a greater protection to the public.

In passing, because of their particular interest to the livestock industry and to the veterinarian, I shall describe briefly the Import Milk Act and the Filled Milk Act which just now, due to war, do not demand the usual attention of the administration.

The Import Milk Act prohibits the importation into the United States of milk or cream that has not been produced under prescribed sanitary conditions from healthy herds, or that does not meet certain specified standards at the time of entry. This law provides for issuing permits to importers and for inspection of milk and cream to insure compliance with the regulations.

The Filled Milk Act prohibits the shipment in interstate or foreign commerce of so-called filled milk, made by removing butter fat from milk and substituting other fat, usually coconut oil, so as to make a product resembling whole milk.

VETERINARY DRUGS AND REMEDIES

In order to avoid a lengthy discussion under this heading and yet give you a comprehensive idea of the Administration's policy regarding veterinary drugs and remedies, I am going to quote from W. G. Campbell, commissioner of food and drugs. Mr. Campbell advises in his notice to manufacturers of livestock and poultry remedies, under date of Dec. 21, 1942, as follows:

"Investigations made by the Food and Drug Administration show that there are many livestock and poultry remedies on the market with labelings that do not conform to the provisions of the Federal Food, Drug, and Cosmetic Act. The labelings bear indefinite directions for use and contain no information about the purposes for which the preparations are to be used, and no adequate warnings for use. Some of these preparations also were found to bear on the labels long lists of ingredients of which many are not active drugs or are not present in therapeutically significant amounts.

The Food, Drug, and Cosmetic Act defines such products as misbranded unless

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Address delivered before the Intermountain Livestock Sanitary Association, Salt Lake City, Jan. 23, 1943.

U. S. Food and Drug Inspector, Denver Station.

their labels bear adequate directions for use, adequate warnings, and the common name of each active ingredient, together with the quantity or proportion of certain specifically mentioned drugs.

Directions for the use of a drug, to be adequate as required by the Act, should furnish not only information as to the dosage, frequency, and duration of administration of the drug, but also information concerning the purpose for which the drug is to be used. For example, a product consisting of therapeutically active amounts of expectorant drugs, when used as directed, may be properly labeled as an expectorant to aid in loosening the accumulation of mucus in the throat. For such purposes, the directions may be adequate for its use when recommended to be used three or four times a day for a period of two or three days and not for an indefinite, prolonged period of time.

As another example, a product consisting of therapeutically active units of astringent drugs may be properly labeled as an astringent for simple diarrhea when directed to be used three or four times a day for two or three days, with a warning to the effect that astringent drugs are harmful if administered over a prolonged period of time.

Many other veterinary preparations investigated were found to consist of ingredients having entirely dissimilar physiological actions. Such preparations are regarded by informed veterinarians as irrational, and adequate directions for their use cannot, in our opinion, be prepared.

In determining whether or not the ingredients of a preparation can be declared active, as provided in the Act, the manufacturer should determine the exact amount of each ingredient present in each dose recommended for each species of animal. If it is concluded from the information that the product, when used as directed, furnishes an amount of any ingredient which would have no physiological effect, it should not be declared directly or indirectly as an active ingredient. While there would be no objection to declaring both the active and inert ingredient, they should be conspicuously designated as such under appropriate headings."

INSPECTION OF ANIMAL FOOD PRODUCTS

It may also be of interest to many of you to know just where the line is drawn between the animal products inspected by the Bureau of Animal Industry and the Food and Drug Administration. Meat products of cattle, swine, sheep and goats, and under certain conditions, horsemeat, when shipped in interstate commerce are produced under the inspection of the Meat Inspection Act; poultry, rabbits, and all other flesh food products are not, and the Food and Drug Administration devotes a considerable amount of its time to the routine inspection of such commodities.

It seems apropos to say, also, that the Food and Drug Administration has been and is engaged in extensive activities dealing with filthy milk for cheese and butter-making. In this regard, the Administration feels that considerable improvement has resulted from the enforcement activities which represent the combined efforts of state, city, and federal agencies, with a large measure of wholehearted coöperation from the industries themselves.

WAR EFFORT

I am sure you will all agree that any remarks before a group these days would be most assuredly incomplete without a definite statement as to what the agency, with which the speaker may be affiliated, is doing in the way of war effort. In this connection, I should like to emphasize the fact that the Food and Drug Administration considers that approximately 40 per cent of its inspectional activities are devoted to increasing the protection afforded the military groups on the foods and drugs they receive, and that everlasting alertness to prevent the debasement of the food and drug supply during war time is a direct contribution to the winning of the war.

The wartime hazards of the general population are bomb casualties, sabotage, shortage of food and drugs, and the illness arising from the breaking down of health measures in congested centers.

Identity of Viruses From Cases of Equine Encephalomyelitis During 1942

M. S. SHAHAN, D.V.M., and L. T. GILTNER, D.V.M.
Washington, D. C.

ABOUT 5,000 cases of infectious equine encephalomyelitis were reported in the United States in 1942.[1] The disease was considerably less prevalent than in any year since 1936, which had a record low of 3,929 cases. Except for this lower incidence, the general epizoötiological features of the disease were essentially the same as for the last decade.

Following the plans of recent years, the Pathological Division's studies of equine encephalomyelitis during 1942 included examination of the viruses isolated from specimens from various sections of the country for the purpose of determining the immunological types of virus. Probably because of the decreased prevalence of the disease, only about 40 specimens were received during the epizoötic season. These, mostly brain specimens, were received from 15 states, in four of which the disease was only provisionally diagnosed. In all, seven strains of virus were recovered. One strain each was isolated from Arizona, Florida, Michigan, North Dakota, and Virginia specimens. Two strains were obtained from Maryland specimens.

The methods which have been followed in examining specimens from suspected cases have been previously described;[2] therefore, only a brief review is given here. Histopathological examinations are made, laboratory animals inoculated (both guinea pigs and mice are used at present), and strains of virus so recovered are subjected to filtration, checked for bacterial contamination, and carried through two or more serial intracerebral passages in laboratory animals. Each strain of virus is then subjected to an immunologic test in guinea pigs. So-called solidly immune guinea pigs, *i.e.*, those which have been vaccinated with formolized chick-embryo vaccine and have withstood confirmatory intracerebral inoculation of homologous virus (eastern or western), and nonvaccinated controls are used in each test. Serial tenfold dilutions of the same suspension of virus that is being typed are usually injected intracerebrally into 5 to 7 groups of 3- to 6-weeks-old female mice for determination of the mouse m.l.d., which in our experience closely parallels the m.l.d. for the guinea pig, except for difference in dosage—0.1 cc. for the guinea pig and 0.33 cc. for the mouse.

A brief outline of typing tests conducted with the seven strains of virus isolated in 1942 follows:

The Arizona strain of virus (2251) was obtained from an equine brain, frozen in dry ice, received Aug. 18, 1942, from Donald Miller and Vego Mikkelson of the U. S. Bureau of Animal Industry and office of the state veterinarian, respectively. The suspension* first prepared from this brain failed to produce encephalomyelitis in inoculated animals, except in a single guinea pig. A fresh suspension prepared later was inoculated into other guinea pigs and mice with the result that 4 of 6 guinea pigs, but none of 10 mice, developed symptoms of encephalomyelitis. The succeeding passage from the guinea pig brains produced the disease in guinea pigs with both Mandler 7 filtrate and unfiltered suspension, but none of the mice inoculated with the same preparations sickened. When this second passage virus was inoculated unfiltered in 1/100 dilution into 4 eastern immune, 4 western immune, and 4 control guinea pigs, only the control animals developed en-

From the Pathological Division, Bureau of Animal Industry, Agricultural Research Administration, Washington, D. C.

*In all the inoculations here reported, the suspensions of brain tissue were prepared in beef-infusion broth or distilled water containing 10 per cent horse serum. Trituration was accomplished in Ten Broeck glass tissue grinders. Inoculations and dilutions were made from supernatant fluid obtained by centrifuging at about 200 r.p.m. for ten minutes.

cephalomyelitis. Six mice immunized with western vaccine and 2 of 6 control mice survived exposure to the same virus dilution. Brain tissue from the above 4 control guinea pigs was planted in 1/100 dilution on the chorioallantoic membrane of 10-day-incubated chicken embryos. After 4 serial passages in embryos, embryonic tissue in 1/100 dilution was inoculated into 4 eastern immune, 4 western immune, and 4 control guinea pigs, and serial dilutions were inoculated into 7 groups of normal mice for titration. In this test, one of the 4 eastern immune guinea pigs, none of the 4 western immunes, and all control guinea pigs developed the disease. The virus was lethal for mice through the 10^{-7} dilution; consequently the guinea pigs received

$$\frac{10{,}000{,}000}{100} \times 3.3, \text{ or } 330{,}000 \text{ mouse m.l.d.}$$

Again returning to the third guinea pig passage of virus, infection was established in chicken embryos and carried through 13 successive passages. From the last passage, a 20 per cent tissue suspension, formolized to 0.4 per cent, was prepared. After proof of inactivation of the virus by intracerebral inoculation of guinea pigs and mice, guinea pigs were vaccinated with the product. These animals were then exposed intracerebrally in proportionate numbers, with appropriate controls, to homologous Arizona virus; a 1942 North Dakota strain of virus (2360) referred to later in this report; a 1941 strain of Michigan virus (1547) previously determined to be of western type; and a 1941 strain of Texas virus (1171)[3] previously determined to be of eastern type. The Arizona (2251) vaccine protected equally well against the North Dakota (2360), Michigan (1547), and Arizona viruses, while all ginea pigs exposed to the Texas (1171) strain of virus succumbed,* as did the controls inoculated with each virus.

The unvaccinated and previously unexposed guinea pigs and mice which had survived the first inoculations of Arizona (2251) horse brain survived injection of Michigan (1547) virus with few exceptions. Finally, guinea pigs vaccinated with Arizona (2251) vaccine which had survived intracerebral inoculation with homologous virus or known western strains resisted subsequent attempts at intracerebral reinfection with other known western strains, but readily succumbed to exposure with known eastern strains. The obvious conclusion was that the strain of virus, Arizona (2251), was of western type.

R. A. Barton of Fredericksburg, Va., submitted an ice-packed equine brain on July 13. Upon original inoculation of both unfiltered and filtered suspensions, both mice and guinea pigs developed encephalomyelitis. This first passage virus, Virginia (2238), from filtrate-inoculated guinea pigs, killed the proved western immune and control guinea pigs, while known eastern immune guinea pigs remained symptomless. The virus was classed as eastern type.

On July 7, formalin-fixed and glycerin-preserved brain tissue from a Florida horse was received from J. W. De Milly of Tallahassee. The 8 guinea pigs and 7 of the 10 mice inoculated with suspension prepared from the glycerinated tissue developed encephalomyelitis. Material from these guinea pigs, filtered, produced the typical disease in all mice and guinea pigs. Virus from the second-passage guinea pigs, when injected into 4 eastern immune, 4 western immune, and 4 control guinea pigs, killed all but the eastern immunes. The virus, Florida (2245), was thus demonstrated to be of eastern type.

Fred C. Driver, Bureau inspector in charge, North Dakota, submitted a horse brain (2360) in buffered glycerin solution, frozen in dry ice, on Aug. 22, 1942. The 8 guinea pigs and 10 mice injected with filtrate or unfiltered suspension developed typical encephalomyelitis. A suspension of brains from the filtrate-inoculated guinea pigs was injected in 1/100 dilution into 4 eastern immune, 4 western immune, and 4 control guinea pigs with the result that all controls, none of the western immunes, and only one of the eastern immunes developed encephalomyelitis. Simultaneous titration

*As used in this report, the term "succumbed" means: died of encephalomyelitis or killed when prostrate from that disease.

of this exposure virus revealed the m.l.d. for mice to be only 10^{-4}, a relatively low infective titer. Serial passages were made in guinea pigs and the virus was established in chicken embryos. After 7 successive passages of the virus in embryos, a vaccine was prepared and used in the same manner as the one prepared with Arizona (2251) virus. Guinea pigs vaccinated with the North Dakota (2360) vaccine withstood inoculation of homologous virus, Arizona (2251) and Michigan (1547) viruses alike, but succumbed, as did the controls, to Texas (1171) virus. After 4 passages in guinea pigs, the North Dakota (2360) virus was used in exposing eastern immunes, western immunes, and control guinea pigs (4 animals in each group). In this test, all but the western immunes succumbed. It was concluded that the virus was western type.

A. L. Brueckner and C. L. Everson of the Maryland Live Stock Sanitary Service submitted a portion of an equine brain and the brain of a guinea pig which had been inoculated with brain tissue from another Maryland horse. After 2 and 1 passages, respectively, the viruses (2419-1 and 2) from these specimens were each inoculated into 4 eastern immune, 4 western immune, and 4 control guinea pigs. All eastern immune guinea pigs survived, while all western immune and control animals developed encephalomyelitis. Thus, it was determined that both strains of virus were of the so-called eastern variety.

One of the most interesting viruses studied during the year was one (Michigan 2448) recovered from a horse brain received on September 19 from C. H. Hays, U. S. Bureau of Animal Industry, and C. H. Clark, state veterinarian. The virus was readily apparent upon first inoculation, but contaminants caused some difficulty. Finally, after several passages, including inoculations of filtrates, 2 typing tests were conducted in guinea pigs. In 1 test, 2 eastern immune, 2 western immune, and control guinea pigs were exposed. In the other test, 8 eastern immune, 8 western immune, and 8 control guinea pigs were used; one-half of each group was exposed to Michigan (2448) virus, and one-half to Michigan (1547) virus, a typical western strain isolated from a 1941 case that occurred in the same general area as the case from which the Michigan (2448) virus was isolated. In both these tests, all eastern immune guinea pigs survived exposure with the Michigan (2448) virus, but those exposed to the Michigan (1547) virus succumbed. Western immunes exposed to Michigan (2448) developed encephalomyelitis, and western immunes exposed to Michigan (1547) virus remained normal. Also, western immune animals that had survived exposure with the 1941 western virus developed encephalomyelitis and died when subsequently inoculated with the 1942 virus. The 1942 virus (Michigan 2448) was thus proved to be the eastern type.

The Michigan outbreak is interesting in several respects. It occurred in a locality from which western virus (Michigan 1547) was recovered in 1941. Of 102 cases reported by Hays and Clark, 93 (91%) resulted fatally. Actually, more than 102 cases probably occurred, but that number was checked by close inquiry. Except for 1 case that developed on October 14 some 30 miles from the original focus, all cases occurred during the months of August and September within the confines of 4 counties. The outbreak developed explosively about August 15 and subsided after freezes in the latter part of September. Eighty-three premises were involved. Sudden onset and acute course characterized all cases. Death occurred in over 90 per cent of the cases within sixteen to thirty-six hours, including a few cases which were killed when hopelessly prostrate. The 4 counties chiefly affected contain many small lakes, ponds, and swamps. There was no great concentration of horses in the area, which is classed as a general farming region. It had been wet and very warm during the outbreak, and mosquitoes and other insects occurred in great numbers.

According to Hays and Clark, little vaccination had been done prior to the outbreak. An exception was on a small breeding farm where western type vaccine had been administered to 18 horses early in

May. Of these animals, three developed encephalomyelitis during the epizoötic, one of which aborted; all recovered. After the disease made its appearance in the area, but before it was determined that eastern type virus was operating, about 3,000 animals were treated with western vaccine. Eleven of these contracted encephalomyelitis and died or were destroyed.

The Michigan State Board of Health reported no cases of encephalitis in human beings during or after the epizoötic.

DISCUSSION

In addition to the 7 cases of encephalomyelitis from which virus was recovered and typed, 8 cases from which virus was not recovered were diagnosed pathologically by G. T. Creech and H. R. Seibold of the Pathological Division of the Bureau of Animal Industry. Neither typical histopathological changes nor virus were found in a number of cases examined in 1942. In some instances, the specimens received during the year were not entirely suitable for laboratory study. Encephalitis was not found in 11 cases. In 3 cases, bacterial infection was the apparent cause of death; 1 case was attributed to gross cerebellar hemorrhage, and 5 cases of hemorrhagic encephalitis were identified.[4]

It is apparent from the limited observations that have been made that the so-called eastern virus is no longer confined, if it ever was, to the eastern seaboard. The virus has been discovered in regions far removed from tidewater in Alabama[2], Texas[3, 5] and Michigan. In Texas, and again in Michigan, the presence of the virus was foretold by the acute nature of the disease and the very high mortality. In other states, Louisiana for example, the mortality records strongly suggest infections with eastern virus.

Repeated, but still inadequate, checking of the disease occurring in the eastern states has thus far revealed only eastern type virus. Still less adequate have been the virus studies of western cases. With the added identification of the virus in Arizona in 1942, it is now known that western virus exists, or has existed, in 18 more or less agriculturally important states. In three of these states, namely, Alabama, Texas, and Michigan, both types of virus have been identified. The occurrence of eastern virus in Michigan may or may not be referable to the existence of that type of virus in the adjacent province of Ontario, Canada, in 1939.[6,7] For all that is known, the virus may be present in silent enzoötic foci in various locations, awaiting only more advantageous biological conditions for activation and dissemination.

From time to time we have encountered strains of virus which, like the Arizona (2251) strain reported here, and some of those described by Birch,[8] appear to vary somewhat from typical western strains, especially when freshly isolated. The chief difficulty in typing these strains seems to lie in their relatively low virulence in early passages in laboratory animals. They may, however, according to our experience, readily be classed with typical western strains if the test virus is carried through several abrupt serial passages in the guinea pig or the chicken embryo. Still more conclusive evidence as to their identity may be secured by immunization with the unknown strain, followed by exposure to known western and eastern strains. Whether or not these originally more or less atypical strains represent beginning variation in type can at present only be conjectured. The fact remains that they do occur.

With the addition of the Michigan (2488) virus here reported, eastern virus has been identified in a total of 13 states, in three of which western virus has also been identified. Thus far, these viruses, whatever their origin, have been found to possess immunologic characteristics readily differentiable from the western type of virus. This specificity is generally apparent soon after isolation and does not require the more prolonged passage in laboratory animals essential for the typing of some strains of western virus.

Only clinical, and in some cases, pathological diagnoses have been made in a number of important agricultural states where equine encephalomyelitis is more or less

prevalent each year. In a few additional states, there is even doubt as to the existence of infectious equine encephalomyelitis. Diagnoses in atypical or doubtful cases should be supplemented wherever possible by laboratory study. If this includes identification of the virus, so much the better. There can be no argument against laboratory investigations into the nature of the virus operating in the various sections of the country. Actually, it remains only to do the job. This requires the full coöperation of practitioner, field man, and laboratory. Repeated laboratory examinations serve not only as a check on clinical diagnoses, but the knowledge derived from them constitutes the very foundation of proper preventive procedures, especially vaccination. Also, of course, laboratory study will permit identification of possible new virus types, as well as those like St. Louis encephalitis, which may be suspected as occurring in both domestic and wild animals. Incidentally, St. Louis encephalitis virus has not yet been isolated in nature, except from man and mosquitoes.

SUMMARY

Immunological studies of 7 strains of equine encephalomyelitis virus isolated in 1942 are reported. Four strains of eastern virus were isolated from cases occurring in areas where only that type of virus had been isolated before. One strain of western virus was isolated from a case in an area where only that type of infection had been previously identified. A western virus was isolated from an Arizona case, bringing the total number of states in which this type of virus has been identified to 18. An eastern virus was isolated from a Michigan specimen, adding that state to the 12, previously recorded, where the eastern type of infection has been identified, and making a total of 3 states where both types have been found.

The significance of identification of equine encephalomyelitis viruses and the need for further studies along that line are discussed.

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The Number of Horses and Mules

Secretary Dinsmore of the Horse and Mule Association of America takes issue with the remark (The Journal, June 1942, page 487) to the effect that the army is having trouble filling its requisitions for transport animals. The remark was based upon information obtained from a horse magazine and from personal interviews. The Dinsmore statistics are as follows:

Workable horses and mules	12,000,000
Actual needs	13,000,000
Tractors	1,500,000
Tractor equivalent in horses	3,000,000*
Total (equivalent) work animals	15,000,000*
Can spare for city use and army	1,000,000*

*The figures are explained on the basis that there are enough animals to farm the country's 325 million acres of crop land since it requires but one horse or mule to farm 25 acres. According to the U. S. Bureau of Census as of April 1, 1940, there are 6,096,799 farms in the United States. Of these, only 1,409,685 use tractors and 4,687,114 use horses and mules. "Horse and mule raisers," Dinsmore says, "have every reason to view the future calmly."

Corregendum.—In the article "Veterinary Notes on Our Second Front" (Feb. 1943, pp. 83-88), the author, M. Panisset, was designated *Director of Studies* at the veterinary school, University of Montreal, instead of *Assistant Director of Studies*. The director of that collegiate service is Dr. G. Labelle, to whom we respectfully apologize. The error was ours, made in writing the footnote identifying the position of the author.

Foot-and-Mouth Disease

The following is a translation of an editorial which appeared in the issue of Jan. 20, 1943 of LA RES, an illustrated review of the meat industry in Argentina. It furnishes an interesting commentary on the control of foot-and-mouth disease in Argentina as viewed by the meat industry for which LA RES, it may be assumed, speaks.

AN UNUSUAL article made its appearance in the newspaper columns: the complete sacrifice of one of the most famous Shorthorn pedigreed ranches, whose components were cremated because of having been attacked with foot-and-mouth disease.

This happened a few days ago in Scotland, the fatherland of the breed, and affected the herd of one of the McGillivray brothers, whose establishment in Aldie is known by all the cattle raisers in the world engaged in the breeding of prize beef cattle.

It has been known, of course, that in the United Kingdom foot-and-mouth disease is combatted by drastic measures and that when the inderdiction of an establishment or determined zones is not considered sufficient, they resort to the sacrifice of the infected herd of cattle so as to prevent spreading the disease.

But the simple information that this or that county was quarantined never took on the significance that this tremendous fact now suggests: the entire destruction of a pedigreed nursery whose 84 components were estimated at more than one and a half million pesos.

If this event is not enough to awaken from their lethargy those who have the greatest interest in the health of farm animals, we must admit that it will at least make them understand what the foot-and-mouth disease means, by virtue of a catastrophe that might achieve saving powers.

It is inadmissible that this disease should continue being the object of the indifference with which it is habitually looked upon, only because up to the present time it has not assumed the nature of extreme virulence as used to be the case in countries of continental Europe, Great Britain, and in the rare cases recorded in the United States of America.

The well-known mildness with which the disease usually appears in the central cattle regions was formerly an evil rather than a good, from a certain point of view. In proving that, in the great majority of cases, this sickness merely retards the development and growth of animals for a certain length of time, it has been looked upon without attributing real importance to it.

But this view, characteristic of a rather primitive mental attitude, loses sight of many aspects of the question. In the first place, one can not evaluate the importance of a disease in simple biological terms. Treating on something that affects a lucrative activity, like cattle raising, it is necessary to take economics into consideration.

If we give our attention to this angle of the matter, we could hardly consider a disease as lacking in importance which, although not spreading throughout the country, closes the doors of that great consumer market, which is North America, to all Argentine meat.

We are not unaware that a thorough fight against foot-and-mouth disease and the adoption of the drastic measures used in the United States would imply tremendous expenses. It would be interesting, however, to make an approximate calculation of what has been lost, economically and socially, by that North American sanitary barricade. We say socially, because the potential prices of that market might have opened extraordinary prospects in certain zones in the southern part of Argentina, where population more than anything else is needed, and this could be developed by merely increasing the volume of exports of lamb considerably.

Furthermore, it has not been ascertained that there are particular guarantees of a geographical, climatic, biologic, etc., na-

ture within the Argentinian borders, by virtue of which one could readily take for granted that the virus of foot-and-mouth disease would be invested in the future with the same relative mildness that characterized the former ones.

Many are the things that are known regarding this disease and the working of the agent that produces it. To place oneself then on safe ground, it is necessary to resort to the greatest precautions, since no one can state fundamentally that an epizoötic of similar virulence to that found in other parts could not make its appearance among our herds tomorrow and cause the death of thousands of heads of cattle.

We do not feel that this is the moment to proclaim the adoption of the policy of sacrifice for combatting the disease, although we admit that one should seriously face the possibility of arriving at it in the not far off future.

But there is a minimum of requirements that we can not overlook. They affect two orders of activity. On the one hand, there is the National Institute of Foot-and-Mouth Disease, whose work should be encouraged in every way, giving real impulse to researches tending to solve the problem of the prevention of the disease and procuring the coöperation of all efforts that are being made toward that end.

It is not that we are expecting immediate results from it. But the development of scientific works is the only rational basis for the justifiable and explicable hope that some day they will have solved the question.

On the other hand, we are up against the animal sanitary police system in whose execution there are many and large gaps. Until one arrives at establishing more radical measures, the least one should do is to apply the most severe interdiction to the establishments where this disease appears, as well as to some others. To this effect, one has to acknowledge that they have not succeeded in spreading a sufficient degree of conviction among the rural measures, and the authorities lack that indispensable element which is the collaboration of the producer to accomplish efficient campaigns of sanitation of cattle.

To overcome this condition, the sanitary authorities will have to open the road, resorting to the most rigid procedures. One need not fear the dust raised by the protests when one is working with reason and in protection of the general interests, as would be the case if one were to immobilize every animal susceptible of spreading infection and disease. What one should not continue tolerating is that herds of cattle should run over the roads every day and be brought to the fairs that spread every kind of new germ and which show—outwardly, we would say — visible signs of the foot-and-mouth disease, not to mention other diseases that we do not hesitate to qualify as shameful.

Mules at Guadalcanal

The blitz transportation for the troops in the operations on Guadalcanal was the pack mule, longtime stand-by of the American fighting soldier, indispensable in so many places where soldiers have to go and everything on wheels is left behind. On Guadalcanal, mules performed valuable service in packing guns, ammunition, signal corps equipment, and food through thick jungles and over steep hills where nothing else could have traveled. We won against the wily Jap on Guadalcanal and mules made that end possible. Of the mule in this successful operation, a medical corps corporal engaged in evacuating the wounded with mule-borne stretchers said, "You get to love these beasts. They've got their personalities just like dogs and even people." So, why not "Here's hats off to the army mule."

The research center at Beltsville, Md., is conducting experiments on cotton to replace silk hosiery. A shortage of silk is said to be imminent owing to relations with Japan, whence much of our silk was imported in exchange for American cotton. Silk and milk are two animal products man tries to imitate but never has duplicated.

Publication Rules of the AVMA

L. A. MERILLAT

Standard Nomenclature

VETERINARY-MEDICAL nomenclature is artless. The pattern is comparable to anarchy in the superlative degree, with no movement whatsoever to establish order. "Standard nomenclature" is the headline of a nonentity in animal medicine. In its absence, veterinary medicine strives to advance in disorder, and therefore, under obstacles that could be removed were the job undertaken by an approved agency. The National Conference of Nomenclature established by medical societies in 1928 led to the publication of a comprehensive book renaming diseases and surgical operations in the field of human medicine. A similar conference is overdue in our realm.

Without the guidance of such a committee, the author of these hurriedly written articles, for example, would not be justified in undertaking a revision based purely upon personal opinion, with but limited knowledge and without a workable plan. The very attempt is like trying to build a skyscraper without blueprints.

The list of words below is but a hint of the dire need for reforming the entire gamut of veterinary-medical and surgical terms. Moreover, it is only through the publication of an officially compiled book that medical lexicographers could be persuaded to discard the archaic veterinary terms they continue to print in default thereof.

The veterinary profession should no longer dodge the responsibility of renaming diseases, operations, and methods of classifying, under general heads, the long list of names connected with the health and production of animals. Nosology remains to be introduced into the veterinary field. Witness the opportunity of clarifying the nature of diseases by grouping them under such general heads as:

arthritis	bursitis
atrophy	cancer
brucellosis	dermatitis
dropsy	periostitis
fistula	sclerosis
hydroarthrosis	stenosis
neurosis	synovitis
ophthalmia	tumor
osteitis	warble
paralysis	wart

etc. etc.

In addition to these generalities, under which many diseases would fall, there are numerous separate ones to rename, pursuant to modern nosology and terminology. Doubtless, the magnitude of the task arrests the attempt. Besides, the cost was never studied. A reasonable hint is to accomplish the end piecemeal. Ability is not lacking. Each addition, approved and published, would be a step forward.

Certainly, requiem and a decent funeral for a long list of words lie in the agendum at this moment. Below are examples submitted for attention — without hope of arousing universal interest or escaping a storm of protests. *Note bene*:

azoturia	navel ill
Bang's Disease	paraphimosis*
blackleg	poll evil
blacktongue	quarter crack
bog spavin	quittor
canine distemper	ringbone
canker (ear, foot)	ridgling
choke (gullet)	roaring
colic (disease)	roup
cribbing	sand crack
curb	scratches
firing	shoeboil
fistulous withers	spaying
foot-and-mouth disease	splint
founder	strangles
gapes	stringhalt
grubs	swine erysipelas
heaves	Texas fever
hog cholera	thoroughpin
laminitis	vent disease
milk fever	warbles
	windpuff

and others

Coining new words to replace old ones is not one of the purposes of this series of

*Not applicable to penile extrusion of animals.

articles. That duty now belongs to the Special Committee on Nomenclature whose work is not to be usurped nor decisions abrogated by a mere editor. But, a few reasons for suggesting revisions are not out of place anywhere, any time, any place:

Azoturia is not an *azote uria*.
Bang's disease is but one of the brucelloses.
Blacktongue is not a disease of the tongue.
Distemper is archaic.
Foot-and-mouth disease has a good technical synonym.
Hog cholera—Where does bile figure in *this* trouble?
Laminitis is not an "itis".
Poll evil fails to define the nature of a known morbidity.
Ringbone is not a ring.
Roup means to croak.
Shoeboil is not a shoe trouble.
Stringhalt is neither a string nor a halt.
Swine erysipelas means redness of the hog's skin.
Texas fever did not originate in Texas.
Windpuff is not a puff of wind.

These few specimens, selected at random, represent an endless list of words which might be eased out of mind to good advantage.

Words Useful in Veterinary-Medical Writing

I. Animal Habitats

aerie.—The abode and nesting place of birds of prey (eagles, hawks).
apiary.—Beehouse or colony of beehouses. Establishment for apiculture,—the raising of bees for honey and wax production.
aquarium.—Confinement for live aquatic animals (fish, sea mammals) or plant life, maintained for exhibition or study. Fish bowl. Fish pond. Establishment for raising aquatic animals (pisciculture). Fishery. Aquatic vivarium.
aviary.—Bird house or colony of bird houses. Establishment for the raising of birds (aviculture).
barn.—Artificial shelter for horses, cattle, and forage crops, as distinguished from *stable* or the part used for housing these animals.
brooder house.—A building specially constructed, artificially heated and regulated for nurturing domestic fowls after hatching.
byre.—Obsolete name for dairy barn, or cow house.
cave.—Natural, underground home or retreat of beasts. A den.
columbary.—Pigeon house. Abode of domestic or wild pigeons. Place for the raising of pigeons. Dovecote.
colony.—Buildings, hives, kennels, hutches, used for raising animals.
coop.—A housing for domestic fowls, especially chickens. Hen house.
corral.—Outdoor enclosure for horses, mules and cattle. Kraal. To round up and capture large animals.
den.—The retreat and natural shelter of wild beasts (lions, tigers, wolves, foxes).
dovecote.—*see* columbary.
eyrie.—Same as aerie, *q. v.*
fold.—An open or enclosed confinement for sheep. Sheep fold. A flock of sheep. To confine sheep—*Obsolete.*
hatchery.—A place for hatching the eggs of domestic fowls or the spawn of fish. Chicken hatchery. Fish hatchery.
hole.—The shelter of subterranean mammals (gophers, groundhogs, skunks, moles, rats). The den of such animals. Cave.
hutch.—The house or colony of houses and yardage for the raising of domestic rabbits. Warren.
kennel.—A house or colony of houses for the domestic dog. Dog house. Place where dogs are raised commercially. A dog farm.
kraal.—Same as corral, *q.v.*
mew.—A cage for hawks, especially used while molting.
pig pen.—Hog house. Sty.
pound.—A place for collecting errant dogs and other stray animals.
rookery.—The abode, roosts, and breeding place of the crow (*Corvus frugilegus*), also of the heron and penguin.
skulk.—A retreat or hiding place of wild foxes.
stable.—Shelter constructed for horses and cattle. That part of a barn (q.v.) used for these animals. An assemblage of horses in training or racing. Training stable. Stable of horses.
sty.—Hog house. *Obsolete.*
vivarium.—A place of confinement for raising nondomestic, terrestial animals as distinguished from aquarium, *q.v.*
warren.—Same as hutch.

Other words applicable to animal habitats are:

battery (chickens)	lambing pen
bird cage	laying house
bird house	paddock
bull pen	pasture
dairy farm	rabbitry
feedlot	ranch
fish pond	range
hoglot	roost
stock farm	

II. ANIMAL GROUPINGS

animalcules.—Multitude of minute organisms, generally in liquid medium, *e.g.* infusoria in stagnant water as distinguished from plant life (algae).

audience.—A gathering of hearers. Rarely applicable to animals.

band.—An assemblage of gregarious mammals. In popular (but not universal usage), a number of horses, sheep, or goats. Bands of sheep and goats are also called flocks.

bevy.—Sportsman's name for assembled larks or quail. Also a covey (*q.v.*) of these birds.

brace.—A pair or more of greyhounds or other large dogs.

brood.—The young of bird kind as distinguished from litter of multiparous mammals. *Brood* applies to any genus or species of the class Aves, domestic or wild, during the period that the young require maternal or artificial nursing.

building.—A flock of crows or other species of the rook.

bunch.—A stock-market term for a shipment of cattle offered for sale.

clattering.—A flock of choughs (Pyrrhocorax), an European crow.

colony.—A cluster of microbes (veg.) grown on solid mediums. *See also*, Habitats.

cloud.—A condensed flock of migrating birds.

congregation.—A gathering of living persons or animals. A collection of separate living units.

covey.—A small flock of wild game (pheasants, grouse, partridges). Also a brood of their young.

drove.—An old, American name for a herd of hogs, sheep, or cattle, derived from the former custom of driving these animals to market.

flight.—A flock of swallows, or of doves.

fledgling.—One or more young birds feathered for flying.

flock.—An assemblage of sheep, goats, chickens, geese, ducks, turkeys and other birds. The feathered animals of the farm.

gang.—A herd of elk or moose.

herd.—An aggregation of domestic or wild mammals, as distinguished from *flock* for feathered animals. The use of *herd*, *band*, *flock*, *drove* is not uniform. A flock of sheep in New York is a band in Montana, and a herd of hogs in Ohio is a drove in eastern Iowa.

muster.—A company of peacocks. A group of animals assembled for counting or inspection, regardless of kind.

nide.—A flock of pheasants.

pack.—The hounds of the chase. Any group of free-range dogs or wolves.

pod.—A school of whales.

pool.—An assemblage of insects crushed and prepared for study of its relation to diseases of higher life. The word is not used for a collection of live insects at large or trapped (G. H. Hart).

plump.—A company of wild fowl (Funk and Wagnalls).

pride.—A company of lions or of peacocks, or a naturally small company of large birds.

school.—A multitude of fishes or other aquatic vertebrates.

shoal.—Same as school. Applied mainly to herrings, and also to fresh water bass.

siege—A flock of herons, or of bitterns. *See also*, Habitats.

sleuth.—A company of bears.

skulk.—A pair or more of wild foxes. *See also*, Habitats.

sounder.—Obsolete word for a herd of hogs.

stand.—A company of plovers (Charadriidae), or snipe (Gallinulinae).

swarm.—A reproductive unit of bees, hornets, or yellow jackets (Vespa).

tribe.—Microörganisms of that subdivision of Bacteriaceae (veg.).

troop.—Primates collectively. A company of apes, gorillas, monkeys. A band of elephants (rare).

watch.—A flock of nightingales (Luscinia).

wisp.—A stand of snipes.

III. VOCAL AND OTHER ARTICULATIONS

bark.—The explosive voice of the genus Canis (dog, wolf, coyote).

bedlam.—The uproar of confined dogs. The din of the dog-pound. The barking barrage of the mismanaged, small-animal hospital.

bellow.—The loud call of the domestic bull and other cattle.

bleat.—Call of the lamb, kid, and of adult sheep.

boom.—Warning cry of the heron and of other birds.

bray.—The raucous outcry of the donkey and mule.

breath.—The blowing murmur of respiration.

bruit.—An abnormal respiratory sound. The abnormal sound heard in auscultation. A râle, or râles.

buzz.—The audible, humming sound made by the wings of insects.

cac-cac-cac.—One of the sounds made by eagles.

cackle.—The cheerful, vocal expression of the domestic hen.

call.—The rutting cry of large mammals. A sportsman's vocal decoy.

caterwaul.—The rutting cry of the domestic cat.

caw.—The cry of the crow and other species of the rook.

chatter.—The incoherent language of primates and flocks of wild birds.

cheep.—The chirpings of mice and chicks.

complaint.—Low, audible expression of pain.

cluck.—The maternal call of the domestic hen while brooding or nursing her chicks.
coo.—Song of the dove and pigeon.
croak.—The harsh cry of the bullfrog; also of the raven.
crow.—The explosive chant of the domestic rooster.
cry.—Used mainly in animals to designate the shrill, torturing neigh of the camel.
fritinency*.—An obsolete word for twitterings.
gabble.—Gibber. Jabber. The rapid chatter of birds and monkeys.
gobble.—The proud babblings of the male turkey.
hiss.—The sibilant sound made by angered or frightened snakes and geese.
honk.—The loud call of wild geese especially in flight.
hoot.—The nocturnal cry of the owl.
howl.—Plaintive cry of distress uttered by dogs and other Canidae.
latration.*—The act of barking.
laugh.—A vocal sound uttered by the laughing sea gull.
moan.—A soft, continuous expression of pain.
mew.—Miaow. Miaul. A vocal plea of the domestic cat.
mock.—The songs of the mocking bird.
moo.—Loud plaintive call of the domestic cow, and other cattle.
neigh.—The loud, prolonged cry of the horse.
peet-weet.—The utterances of the sandpiper.
pule.—The piping of chicks.
purr.—The peaceful respiratory murmur of the contented cat.
quack.—The incoherent babbling of ducks.
râle.—Abnormal respiratory sounds in the lungs, usually plural—râles.
reboation.*—Long, continuous mooing.
scream.—Screeching of the eagle and certain hawks.
snarl.—The growl of the angry dog.
snore.—A loud, rhonchus sound made by sleeping animals, especially by the rhinoceros.
squawk.—A loud raucous sound made by herons.
squeal.—The shrill protestations of hogs.
squeak.—A sharp, but weak sound made by small rodents.
troat.—A rutting cry of the buck.
ululation.—The act of habitual howling.
urumph-urumph.—The hoarse protestation of the elephant.
vociferation.—Violent outcry of an injured animal.
whinny.—Same as neigh.
whistle.—Shrill, vocal expression of certain birds.
whoof.—Characteristic utterance of a frightened hog.
whump-whump.—Noise made by the wings of the pelican in flight.
woodnote.—Bird song in the forest.
yarr.—Growl. Snarl.
yell.—Yelp. The outcry of an injured or frightened dog.

*From Roget's Thesaurus.

Readers need not be reminded that the short definitions given to the words catalogued above are limited to their use in veterinary-medical writing. Dictionaries give some of them much broader meanings. As convenient modifiers for the foregoing words, one would naturally suggest:

angry	loud
animated	low-pitched
atypical	maddening
cheering	muffled
clashing	plaintive
clear	rasping
dull	raucous
ear-splitting	rhythmic
explosive	roaring
faint	sharp
fearful	shrill
gurgling	strange
hideous	terrifying
high-pitched	throaty
hissing	thundering
hoarse	tuneful
hollow	typical
humming	violent
incessant	weird
joyous	whistling

Fanfaron Not in the Cards

May we stop again to say that the articles on "Publication Rules of the AVMA" are not written from any thought approaching the holier-than-thou spirit. The object is solely the planting of a seed that may blossom in years to come. Were the planting unnecessary (or futile), that would be immensely complimentary to our little circle.

Did it ever occur to you that the principal reason for fighting for democracy is that no two democracies ever fought a major war against each other? Democracy by that token alone is the shortest cut to perpetual peace. Grand monarchies and dictatorships have fought one another and fought the democracies and *vice versa*, but a great war between two democratic countries is yet to go into the history of this civilization.

Democracy will survive long after Nazi inhumanity has crumbled in the dust.

Equine Abortion

W. W. DIMOCK, D.V.M.
Lexington, Kentucky

DURING THE LAST thirty years, the action and relationship of a number of infectious agents, including a filterable virus, as causes of abortion in the equine species have been greatly clarified.

W. L. Williams was the first to describe the clinical symptoms and gross pathology of equine contagious abortion.

Prof. E. S. Good, working at the Kentucky Agricultural Experiment Station, made a most valuable contribution to our understanding of equine contagious abortion, now known as Salmonella abortion. From his work have come accurate methods of diagnosis and an effective method for prevention by vaccination.

Dimock and Edwards of the same institution were the first to recognize and demonstrate a filterable virus as a cause of an epizoötic type of abortion among mares. They also carried on clinical observations and laboratory studies that led to a better understanding of how streptococcic infection of the genital tract of mares is related to abortion and to navel and joint ill of foals.

From a detailed study of 900 cases of abortion, 60 per cent were found to be due to some infectious agent and 10 per cent to be cases of twin pregnancies. Other recognizable or evident causes were torsion of the umbilical cord and accident or injury to the mare. In the remainder of the cases (approximately 25%), no infectious agent was found. In some, pathological changes and abnormalities were observed that could be said to represent the causative factor. In others, there was no direct or remote evidence of a condition to explain the abortion.

It is assumed that some cases of abortion may be the result of either general or specific types of malnutrition, unbalanced physiological functions, ovarian disturbances, noninfectious functional disturbances of the uterus, vaginitis, and probably a number of other unknown conditions of a functional and organic nature that are not possible of exact determination and, thus, can be brought out as factors only through a process of elimination of the more evident possible causes and a careful analysis of each individual case.

The diagnosis of Salmonella abortion may be established by isolation of the causative agent, either from the aborted fetus, or from the uterine secretion for some days following the abortion. Since cultural methods are not always possible for a practitioner to carry out, the blood agglutination test is more often used, and it should be stated that the blood test is exceedingly reliable.

In the tube agglutination test for Salmonella abortion, using for antigen a suspension of bacteria grown on agar slant culture, it should be remembered that agglutination in a dilution below 1 to 200 is to be considered negative. It is always well to inquire if the mares from which the blood samples are taken have been given injections of equine contagious abortion vaccine within a period of a month to a year. In vaccinated mares, the blood titer will be high for some time following vaccination.

Presented at the seventy-ninth annual meeting of the American Veterinary Medical Association, Chicago, Ill., Aug. 24-27, 1942.

For the diagnosis of contagious equine abortion by the agglutination test, Edwards and Bruner of the Department of Animal Pathology, Kentucky Agricultural Experiment Station, use a 24-hour-old infusion-broth culture which has been formalized with an equal amount of 0.6 per cent formalin as antigen. Blood is taken from the suspected mare, the serum is separated from the blood clot and diluted 1 to 10. One cc. of antigen is placed in each of a series of agglutination tubes and the suspected serum is added in sufficient amount to make a dilution of 1 to 50 in the first tube, 1 to 100 in the second, and so on. The agglutination tubes are placed in a water bath at 50 C. and are read after one to two hours of incubation. A mare is diagnosed as positive when her agglutinating titer goes above 500.

The etiological agent of contagious equine abortion is a motile, gram-negative rod which belongs to the genus Salmonella. In the Kauffmann-White schema for the serological classification of Salmonella types, *Salmonella abortivo-equinus* belongs in the somatic group B along with *Salmonella (Aertrycke) typhi-muruim* and *Salmonella paratyphi B*. There are about 25 types in this somatic group which have common somatic antigens and cross-agglutinate readily. *S. abortivo-equinus* is described as a monophasic Salmonella type because its flagellar antigens are found naturally in only one phase (e, n, x...). These antigens also are found in other members of the genus. Accordingly, the antigenic formula of *S. abortivo-equinus* is designated IV, XII...: e, n, x.... Somatic antigens IV and XII are common to all members of group B. It is considered to be monophasic because, on plating, individual colonies are always IV, XII...: e, n, x.... When a diphasic culture is plated, some of the colonies are found to possess one kind of flagellar antigens and the others a different kind, even though the somatic antigens remain constant.

In the diagnosis of virus abortion, the fetus will be bacteriologically negative and the blood test will be negative to Salmonella. On gross examination, small areas of necrosis will be observed on the liver. Histopathological sections of the liver will show areas of necrosis and usually intranuclear inclusion bodies. Intranuclear inclusions may also be found in the lung tissue. These inclusions may be demonstrated by use of the regular hemotoxylin-eosin staining technique. L. J. Goss found the modified willhite stain (rosaniline violet) to be a good stain for the lung sections. (Refer to Kentucky Agricultural Experiment Station Bulletin No. 426 for more detailed information).

For the man in the field, it should be added that the practical procedure to keep in mind in all cases of abortion in mares is to collect a blood sample and send it to a laboratory to be tested by the agglutination method for Salmonella infection. Hold an autopsy on the fetus and look especially for small, grayish-white areas of necrosis on the liver surfaces. In many cases, there will be an excess of serum in the thoracic cavity and hemorrhages on the heart. Remove three or four pieces of liver and lung tissue, one-half inch square, place in a half-pint jar, and fill the jar with a 10 per cent solution of formaldehyde. Ship this material to a laboratory for histopathological examination.

The diagnosis of streptococcic abortion is determined by isolation of streptococci from the aborted fetus. The mare usually will show evidence of metritis and cervicitis, the blood test will be negative to Salmonella, and there will be no spread of the infection from one mare to another.

While laboratory tests are most helpful and are often required to establish definitely the cause of abortion, it should not be overlooked that, clinically, each infectious type of abortion does present one or more rather distinct characteristics. Therefore, the clinician should carefully consider all features of each individual case, particularly so, when a number of abortions occur in the same group of mares.

The diagnosis of twin abortion is made on finding the second fetus, or on recognizing unmistakable evidence of twin pregnancy in the fetal placenta. It is understandable that any mare carrying twins

may become infected with Salmonella, virus, or streptococci. It is true, however, that most cases of twin abortions in mares are the result of the twin pregnancy and not the result of any other factor. In all cases where the fetus and fetal membranes are available for examination, their condition, particularly the condition of the umbilical cord, should be carefully considered. The history of any accident, the nutrition of the mare, her history as a foal producer, and a careful, detailed, clinical examination of the reproductive organs will usually throw some light on the case.

Vaccination will prevent equine contagious abortion. The condition of the genital tract of the mare before service and the sanitary precautions taken at the time of service are important in reducing the incidence of streptococcic abortion.

In Salmonella abortion, there may or may not be indications of approaching abortion. However, the mare shows evidence of great physical disturbance. There is no relaxation of genital structure and adjacent parts. Injuries and bruises to the vulvo-vaginal canal and retained placenta are quite common. Return of parts to normal is fairly prompt except in those cases with retained placenta, injuries, and an invasion of the genital tract by streptococci. The genital tract is unusually vulnerable to invasion by streptococcic infection following Salmonella abortion.

The control and prevention of equine virus abortion, in so far as can be carried out, consists of the separation of the mares into small groups and of the strict isolation of the aborting mare. A liver-tissue vaccine used experimentally gives promise of being effective and in time may become available commercially.

In virus abortion, there are no premonitory symptoms and no evident discomfort of the mare. The aborting mare continues to eat and the fetal membranes are usually passed with the fetus or immediately following. The genital tract will be free of bacterial infection and returns to normal, on the whole, quite as promptly as following a normal parturition. Virus abortion, like Salmonella abortion, most often occurs late in the period of gestation, from six months to term; there are, of course, some exceptions. Recently, a veterinarian in Lexington brought in a blood sample from a mare that had aborted at about the fourth month of pregnancy. Much to the surprise of all of us, complete agglutination occurred in a dilution of 1 to 10,000, and almost complete in a dilution of 1 to 20,000. In some cases of virus abortion infection, the foal is born at term. Such full-term foals may be dead at birth, but have been known to live from eighteen to twenty-four hours. Usually, they show marked lesions of virus abortion.

Both Salmonella and virus abortion are infectious, transmissible diseases. Therefore, the aborting mare should be isolated at once. The fetus and fetal membranes should be burned or buried. The straw and other refuse in the stall should be burned. The stall should be thoroughly cleaned and disinfected. Experience seems to indicate that proper handling of the first case will help materially to prevent spread of the virus. More detailed explanation of handling mares in outbreaks of virus abortion will be found in the Kentucky Agricultural Experiment Station Bulletin No. 426.

A Film for Surgical Dressings

In using an aqueous sulfadiazine solution in triethanolamine for the treatment of burns, the author noted the concurrent disadvantages that the drying time was slow and the film which formed over the burned surface was thin and fragile. To remedy these difficulties, methyl cellulose was added to the solution, and this definitely enhanced the drying and film-forming properties of the solution. This led to the idea that a preformed sulfonamide film might serve a useful purpose in surgery.

The films which finally gave the best results are made as follows: An emulsion is prepared containing 3 per cent sulfadiazine or sulfanilamide, 2.5 per cent methyl cellulose (Dow Methocel—15 centipoise), 3 per cent triethanolamine, and 0.5 per cent sorbitol, with 50 per cent alcohol or acetone added to make 100 cc. The resulting emul-

sion is sprayed on a smooth, horizontal, glass surface and allowed to dry. The films are stable and can be sterilized by dry heat. Composition studies indicate that they contain 35 to 50 per cent sulfonamide.

In practice, a piece of film of suitable size and shape is placed over the previously cleaned and moistened area which is to be treated. A smooth, firm pressure-dressing of gauze is then applied. It has been the practice to allow this film to remain in place three to five days. Since the film is translucent, the injured area may be inspected readily without removing it.

Sulfonamide films were used in more than 100 cases, 50 of which were burns. The uses in the other cases were: to cover recent incisions and lacerations; to prepare granulating areas for grafting; to cover recipient and donor areas at the time of grafting; to cover abraded and ulcerated areas; and as a framework to hasten closure and regeneration of perforated ear drums. With the recommended concentration of sulfonamide, no infection has occurred.

[*K. L. Pickrell: A Sulfonamide Film for use as a Surgical Dressing—A Preliminary Report, Bul. Johns Hopkins Hospital, 71, (Nov. 1942): 304-306.*]

Caudal (=Epidural) Analgesia in Human Medicine

We have a letter (Oct. 23, 1926) from a manufacturer of anesthetic solutions (procaine and cocaine) in hermetic ampoules for dentists and physicians which was written in reply to a suggestion that such ampoules of proper strength and dose would be popular among veterinarians for the new obstetric analgesia Dr. Benesch of Austria had just demonstrated before the annual meeting of the American Veterinary Medical Association at Lexington, Ky., in 1926. The answer was (and we quote): "Caudal anesthesia has been tried over and over in human medicine but was abandoned as worthless. It is nothing new."

In 1943, or seventeen years later, after thousands upon thousands of caudal anesthesias have been employed with remarkable effect in animal obstetrics and surgery of various sorts about the pelvic region, the medical press is announcing "a new method for painless childbirth" recognized and practiced by the U. S. Public Health Service at the Marine Hospital on Staten Island, at the Mayo Clinic, at the Philadelphia Lying-In Hospital, and other places. Articles[1] on the subject describe and illustrate the procedure, named *Continuous Caudal Anesthesia*, in detail, including particularly the autonomic nerve supply of the uterus which the operation aims to block without unnecessary interference with other regions through the penetration of the needle into the subarachnoid space lying, of course, immediately superior to the pericaudal space. In quadrupeds the length and capacity of the latter makes that accident improbable. In animals, one can penetrate the spinal dura only by entering the neural canal anterior to the sacrum.

The drug used is metycaine (1.5%) in isotonic sodium chloride solution[1]: dose 30 cc. injected slowly after ascertaining that the needle has not penetrated beyond the peridural space of the sacral canal. Since landmarks are less prominent than in animals and the sacral hiatus is small, the penetration of the needle (2-in. 19 gauge) to the proper site, although called simple by some authors, seems to be quite difficult. The advantages over inhalation anesthesia are longer duration of the anesthetic state and no alteration of uterine motility and mechanism. Its purpose of continuous caudal analgesia is annulling labor pains, a step not practiced in veterinary obstetrics. In the veterinary field, the indications are numerous and its use routine.

[1]Hingson, Robert A., and Edwards, Waldo B.: Continuous Caudal Analgesia in Obstetrics. J.A.M.A., *121*, (Jan. 23, 1943): 226-228. Gready, Thomas G., and Hasseltine, H. Close: *Ibid.*: 229-230.

The presumption that "brucellosis makes a bed for tuberculosis" is contradicted by Purrid and colleagues (*J.A.M.A.*, May 16, 1942, p. 298), who contend that from personal observations tuberculous morbidity in brucella-infected employees was lower than in employees without brucellosis. The authors investigated the index of tuberculous infection in workers in meat packing plants.

Carcinoma of the Stomach of a Dog

C. L. DAVIS, D.V.M., and J. RICHARD NAYLOR, D.V.M.
Denver, Colorado

EPITHELIAL AND OTHER malignancies are not uncommon in domestic animals, the dog showing a greater tendency toward neoplastic diseases than other species. Their frequent occurrence in dogs may be due in part to the fact that, unlike other domestic animals, many dogs live to the age when the incidence of tumors increases, as in man. Among the epithelial growths affecting the canine species, the majority of carcinomas arise in the skin and mammary tissue. Although the internal organs occasionally show primary carcinomatous involvement, epithelial malignancies of the gastrointestinal tract are considered rare in domestic animals, including the dog. References to carcinoma of the stomach in the dog are few. Feldman[1] cites the work of Friedberger and Fröhner who mentioned one case of carcinoma of the stomach in 70,000 dogs observed. Miles[2] described a carcinoma of the lesser curvature of the stomach of a female Bull Terrier. The walls of the involved portion of the stomach had become so thickened that it resulted in almost complete occlusion of the pylorus and prevented the passage of food into the small intestine. The outstanding clinical symptom in this case was vomiting from one-half to one hour after taking food. Among nine selected and unusual malignant tumors in dogs, Rudduck and Willis[3] report one case of carcinoma of the stomach. In that case, the lesion was situated at the junction of the esophagus and stomach. Metastasis was found in a regional lymph node only. Rubarth[4] describes an adenocarcinoma of the stomach of a dog in which

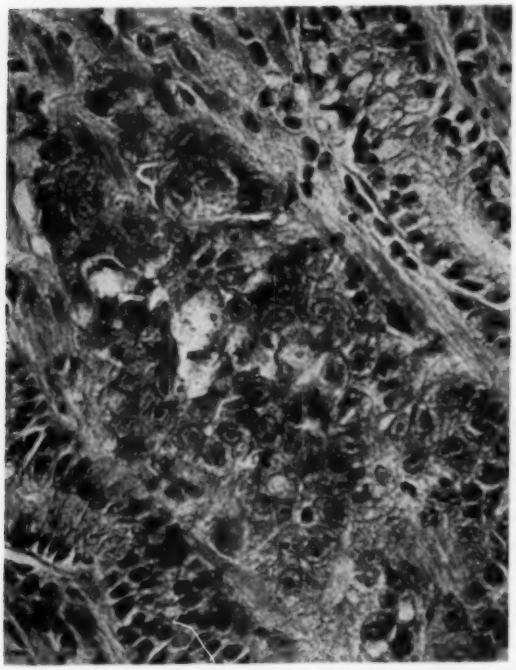

Fig. 1—Carcinoma of stomach. A nest of tumor cells in the mucosa. Note the large nuclei and prominent nucleoli of the tumor cells. x550.

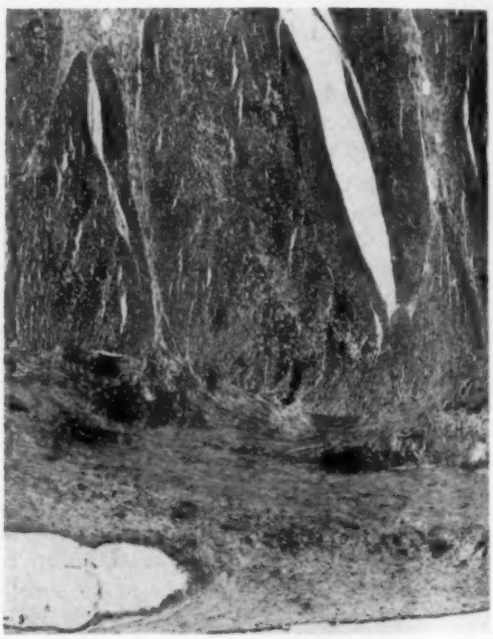

Fig. 2—Carcinoma of stomach. Scattered groups of tumor cells are seen invading the muscular layers. x45.

From the Branch Pathological Laboratory, U. S. Bureau of Animal Industry, Denver, Colorado.

the tumor originated in the mucous membrane of the pylorus and then diffusely infiltrated the wall of the stomach without giving rise to any metastasis. He commented on the rarity of primary carcinoma of the stomach and intestines in domestic animals. Because of the paucity of cases

Fig. 3—Carcinoma of stomach. Higher magnification of figure 2 showing a nest of tumor cells in the muscularis. x550.

reported in the literature, it is perhaps worthwhile to record another case of this uncommon condition.

REPORT OF A CASE

The subject was a 9-year-old male Chow which suddenly showed inappetence and listlessness. He was indifferent to surroundings and irritable when handled by the owner. His coat became rough and dry and there was rapid loss of weight. The temperature was within normal limits. After ten days of hospitalization and symptomatic treatment for a suspected gastric condition, the animal became progressively worse. He vomited shortly after the intake of solids or liquids, and also considerable pure blood. In addition, there was a bloody discharge from the bowel. Further treatment appeared to be of no avail and the dog was sacrificed for autopsy purposes. On postmortem examination, a tumor mass measuring about 6.0 inches in diameter was found in the pyloric portion of the stomach. The lesion extended for a short distance into the fundus and duodenum. The pyloric region was considerably thickened which resulted in the narrowing of the pylorus. The stomach lesion contained a crater-like hemorrhagic ulcer, measuring 1.5 by 3.0 inches, with raised nodular edges. Examination of the visceral organs and

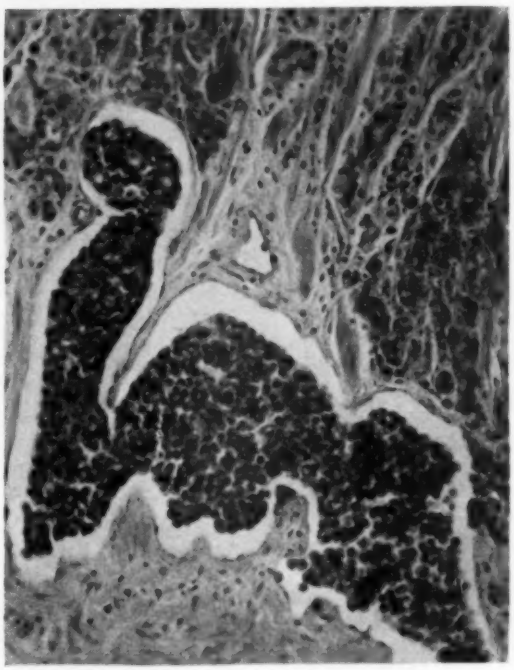

Fig. 4—Carcinoma of stomach. A lymph space plugged with tumor cells. Also to the right and above the lymph space are tumor cells growing in chords. x475.

lymph nodes failed to show any metastasis.

Histologic sections stained with hemotoxylin and eosin showed the neoplasm to consist of epithelial cells with large hyperchromatic nuclei and prominent nucleoli (fig. 1). The tumor cells invaded all layers of the stomach, extending from the mucosa to and including the serosa (fig. 2). The cells for the most part were arranged in cords or masses and scattered isolated cells were seen in some fields (fig. 3). Only an

occasional tendency to gland formation was noted. Mitosis was common. The lymph spaces in the submucosa were filled with tumor cells (fig. 4). The ulcerating portion

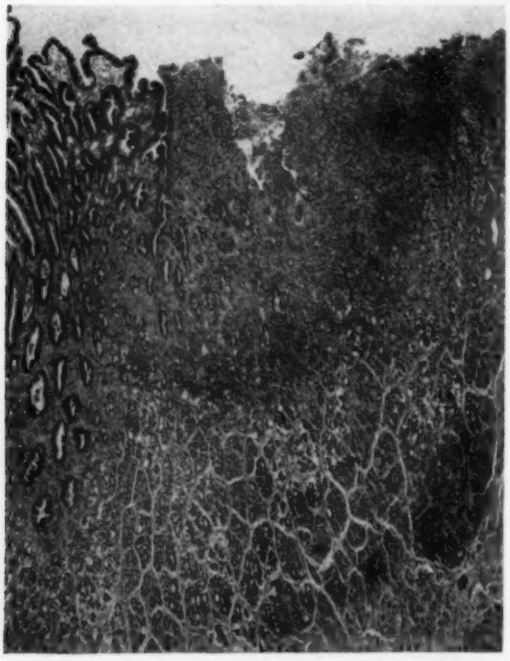

Fig. 5—Carcinoma of stomach. Note the sharp line of demarcation between the ulcer and the superficial mucosa. The lower right field contains a nest of tumor cells. x45.

of the growth was sharply demarcated from the normal superficial glandular tissue (fig. 5).

COMMENTS

The gross and microscopic picture presented in this case corresponds in some respects to the excavating form of cancer of the stomach in man as described by Boyd.[5] Whether or not the ulcer preceeded the cancerous formation is difficult to say, although according to Boyd about 5 per cent of chronic gastric ulcers in man may develop into carcinoma. In the case cited, there was no clinical evidence of an ulcer prior to the onset of symptoms, although it is probable that such was the case. Jensen and Frederick,[6] in their study of spontaneous ulcer of the stomach in several domestic animals, found an incidence of about 1 in 70 for bovine animals; 1 in 60 for sheep; 1 in 30 for hogs; and 1 in 50 for dogs. Considering the large animal population in this and other countries, on the basis of the incidence of spontaneous gastric ulcers, it is surprising that more stomach carcinomas are not encountered in domestic animals, particularly the dog.

SUMMARY

A case of carcinoma of the stomach of a dog without metastasis is described. The tumor apparently arose in the pyloric region of the stomach which extended into the fundus and duodenum. The gastric portion of the lesion contained an ulcer. The macroscopic and microscopic appearance of the tumor corresponds to the excavating form of cancer of the stomach in man. The main clinical symptoms exhibited by the animal before euthanasia were inappetance, vomiting, rapid loss of weight and listlessness.

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[5]Boyd, William: A Textbook of Pathology. Lea & Febiger, Philadelphia. (1938): 532.

[6]Jensen, L. B., and Frederick, L. D.: Spontaneous Ulcer of the Stomach in Several Domestic Animals. J.A.V.M.A., *95*, (Aug. 1939): 167-169.

Iron for the Pregnant

The administration of iron to pregnant mothers, during the months approaching term, is needed to replenish the iron lost to the fetus, according to a series of investigations carried out on women in England (*Lancet*, Aug. 8, 1942). The need was greatest in working women. In reporting their controlled investigation involving 392 women, iron should be given to the pregnant as a routine, the authors state.

In view of the anemia that overtakes young animals and their prompt response to ferruginous therapy lends importance to this report in veterinary medicine.

Bladder Displacement Due to Pelvic Fracture

W. A. WILCOX, D.V.M.

Angell Memorial Hospital
Boston, Mass.

On Nov. 9, 1942, a 2-year-old Cairn Terrier, male, was presented at our clinic with a history of having been struck by an automobile three days before. The animal showed a reluctance to walk, but when urged to do so, he moved with a painful, straddling gait.

Fig. 1—A radiograph of the pelvis from a ventro-dorsal position, showing an oblique fracture, running from left to right.

Pelvic inspection revealed a superficial enlargement beginning just anterior to the testicles and passing forward, 9 cm. to the left side of the penis. It extended towards the inguinal region about 4 cm. The area surrounding the enlargement for 4 to 5 cm., and the enlargement itself were reddish blue. The enlargement was firm and sensitive. No definite hernial ring could be defined. A fracture of the pelvic floor, slightly to the right of the median line was detected by rectal palpation. A tentative diagnosis of inguinal hernia with fracture of the pelvis was made.

A radiograph (fig. 1) of the pelvis from a ventro-dorsal position revealed an oblique fracture, running from left to right, starting at the left acetabular branch of the pubis, crossing the symphysis between the obturator foramens and continuing through the posterior border of the right ischium. There was a gaping at the pubic end of the fracture up to 0.6 cm. in width (¼").

It was decided to treat the bruised area and await developments. A course of treatment consisting of hot packs and rest was instigated. In five days, the tenseness started to leave, the sensitiveness to disappear, and the enlargement became smaller and softer. Until the ninth day it appeared that a spontaneous recovery would occur.

Fig. 2—A radiograph taken seven days after operation, showing silver wire still in place with no widening of the fracture.

On the tenth day, however, examination revealed an extensive soft enlargement in the same area occupied by the original swelling. As slight pressure on the enlargement expressed the urine through the penis, an operation was decided upon.

Operative Procedure.—Sodium pentobarbital was administered intravenously. The

area was aseptically prepared and draped. An incision was made 3 cm. anterior to the testicles, 2 cm. from the penis and forward for a distance of 6 cm. The bladder, felt just under the skin and fascia, was replaced into the abdomen through a slit in the prepubic tendon. This slit, through which the bladder protruded, was about 2.5 cm. long, starting 2.5 cm. anterior to the pelvis and extending back into the fracture. Further examination disclosed that pressure on the hind legs caused a widening of the fracture and slit large enough for the bladder to emerge. At the operating room consultation it was decided to wire the fractured ends of the pubis together.

About 10 cm. of silver wire and a bone drill were sterilized. A hole was drilled through the pubis on either side of the fracture, 0.6 cm. from the anterior border and from the fractured surface. A double strand of silver wire was threaded through the holes with a Loopuyt needle and the needle-end separated into two pieces. The fractured surfaces were drawn together as closely as possible and both strands of wire tied with square knots. The slit in the prepubic tendon was sutured with 00 chromic gut and the external wound closed.

The animal showed daily improvement in the use of its hind legs with but slight limitation of motion. A radiograph (fig. 2), taken at the end of seven days revealed the wire still in place with no widening of the fracture. He was discharged the next day with instructions to limit activity for two weeks. Six weeks later he was returned with a report that there was no impairment of motion in the hind legs. A final radiograph showed the wire in the original position.

Sudden death without warning in surgical anesthesia induced with barbiturates are due to the brain center losing its sensitivity to the stimulating action of carbon dioxide. Added to the depressed respiration, the piling up of carbon dioxide in the blood makes a serious combination.—*H. K. Beecher and C. A. Moyer, Harvard Medical School, Science, Nov. 14, 1941.*

Blue Cross Animal Relief

The difficulty of recent years to locate the society known in the veterinary circle as the "Blue Cross" was removed when Miss Maude Phillips, 194 Colony road, Springfield, Mass., wrote Dr. H. W. Jakeman, reminding him that the society was organized in 1915 with W. Horace Hoskins, dean of New York State Veterinary College, New York University, on the Advisory Council and that Gordon B. Huse, 162 Broadway, Springfield, Mass., is now the "Blue Cross Veterinarian." The purpose of the letter was to obtain information about the veterinary associations of this country, evidently for the purpose of developing interest among veterinarians in the projects of that organization.

The right of veterinarians to use the blue cross as an insignia as physicians use the red cross was frequently raised, but the occasional efforts made to get in touch with the proper authorities were abortive. Even the American Humane Society was not aware of its location. The Blue Cross Animal Relief is remembered as having made some headway during the early phases of World War I, and this writer recalls communications coming to France at the height of A. E. F. operations proffering horse ambulances for use by the American troops. But the offer was not acceptable owing to lack of shipping and its too late arrival. After 25 years, it is, however, not too late for the A. E. F. veterinary officers to say thank you. Such ambulances would have been useful, indeed.

It is not too late either to compliment the Blue Cross for having induced the 76th Congress to pass a law protecting the American eagle against commercial exploitation.

The Society of Women Veterinary Surgeons has been organized in Great Britain as a division of the national organization. Its first president is Joan O. Joshua, M.R.C.V.S., Church End, Finchley. An address by her at the inaugural meeting of the Society was a strong plea for fair play and justice in behalf of the woman veterinarian.

CLINICAL DATA

A New Cottonseed Chicken Feed

The objectionable discoloration of eggs laid by hens fed cottonseed meal is prevented by a new processed meal devised by Nutritionist Carl M. Lyman of the Texas Agricultural Experiment Station. The meal is produced by a hydraulic process and although it is not yet commercially available, mills can produce it without extensive alterations.—*From Poultry Tribune.*

Sulfonamide Drugs in Anthrax

Sulfathiazole and sulfapyridine were found to be reliable and safe substitutes for serum treatment in 60 cases of external anthrax (human). Fifty-one of the cases were engaged in the manufacture of innerlining made from goat hair obtained in China and India; of 21 treated with serum, 1 died; 42 treated with sulfonamides recovered; 1 on sulfathiazole and 1 on sulfapyridine did not respond adequately and were given serum. The conclusion was that patients not responding to sulfonamide in three days should be treated with anti-anthrax serum. The chemotherapy materially shortened the period of disability.

Niacin Requirement of Dogs and Man

The niacin (=nicotinic acid) requirement of the adult dog ranges from 200 to 225 micrograms per kilogram of live weight and from 50 to 75 per cent more for the growing dog. From this finding, the authors conclude that the requirement of a 70 kilogram man (=154 lb.) would be 10 milligrams per day. These authors also confirm the observations of others that sulfapyridine inhibits the curative action of niacin and suggest that fresh liver may prevent the inhibitory action. [*Editorial: Nicotinic Acid Deficiency in Dogs. Nutrition Reviews, 1, (Jan. 1943):80-81.*]

The Dosage of Totaquin

The Food and Drug Administration recommends that manufacturers of the antimalarial remedy, totaquine, should inform consumers how long the contents of the package will last as malaria treatment. The dosage should be 30 gr. daily for seven days, although the Administration admits that it is without authority to enforce such a measure. The use of totaquine is a waste unless taken in the right amount.—*Miscellaneous, J.A.M.A. (Jan. 9, 1943): 138.*

Triethylene Glycol, Virus Disinfectant

Small amounts of triethylene-glycol vapor was found to be disinfectant against the virus of influenza and also Pneumococcus and Streptococcus when distributed through the atmosphere of a room at the rate of 0.1 cc. to each 800 cu. ft. of air. This amount protected mice against air-borne influenza virus, while the controls died. The poisonous effects of the vapor when inhaled for a long period are being studied. It was shown also that propylene glycol is an air disinfectant and practically nontoxic for laboratory animals, but is less deadly to germs than the triethylene product.—*From the University of Chicago, Department of Medicine, Science News Letter, Jan. 11, 1943.*

Avitaminosis C in heavy laying hens was manifested by leg weakness, inanition and decreased egg production in a study made by Bell, Satterfield and Cook of the University of North Carolina. The results became noticeable after about two months of ascorbic acid privation, and recovery after receiving 10 daily injections of 1,000 mg. was dramatic.—*Abstr. E. S. R., May, 1942, p. 666.*

Arguments over imaginary troubles of the farmer should be put in cold storage until the Nazis go out to the farms to look things over.

The Lethal Dose of Lead for the Cow: The Elimination of Ingested Lead Through the Milk

W. B. WHITE, Ph.D., P. A. CLIFFORD, M. A., and H. O. CALVERY, Ph.D.
U. S. Food and Drug Administration
Washington, D. C.

A press account of lead poisoning in a herd of cows in the vicinity of Washington, D. C., seemed to promise light on the open question of the quantity of lead, mixed with feed, that would be lethal for the cow. While there are many references in the literature to lead poisoning of cattle, especially from the consumption of forage contaminated with smelter fumes or poison sprays and dusts, there is little information on the amounts of lead which the cattle consumed, nor on the extent of lead found in the milk of the survivors. Cows are generally believed by veterinarians to be about the most susceptible domestic animals to lead poisoning, and this view is confirmed by E. Fröhner, in his text *Toxikologie für Tierärtze (4 Aufl. Stuttgart, 1919)*.

A visit to the farm disclosed the following information: On Monday, Feb. 7, 1938, a herd of 9 milk cows had been given, for the first time, two feedings (morning and evening) of a ground mixture of soybean and corn fodder. The amount per feeding was estimated at one peck. Since a dry quart of the feed weighed 204 Gms., each cow received in the neighborhood of 3.26 kilos of feed that day. This was entirely consumed, but the herd went "off feed" the next day and ate no more thereafter. The first cow died on February 11, and by February 18, 18 cows had died. The cause of death was diagnosed by a local veterinarian as lead poisoning from red oxide of lead which had been pulverized in the farm feed-mill previous to the grinding of the batch of feed. The mill had not been cleaned after the pigment was run through it. The symptoms of the cows had been typical of acute lead poisoning — severe diarrhea and paralysis, with convulsions and terminal symptoms indicative of great pain. Many of the stanchions had been broken by the animals. Some "had almost died standing."

When, on Feb. 19, 1938, we visited the farm we found one cow of the herd still alive. She was a Jersey in the process of being "dried off,"—very thin and suffering from mild diarrhea. She was milked dry at 11:30 a.m., into lead-free, glass-stoppered, Pyrex flasks with every precaution against contamination of the milk from outside sources. The total yield was only about 200 cc. This milk, on subsequent analysis by ashing, dithizone isolation of lead and determination by electrolysis, yielded 2.26 parts of Pb per million. Milk was also drawn in the same manner from a red cow belonging to the farm owner, but cared for by the tenant and herd owner. While she had been fed none of the ground feed, she had eaten enough from the neighboring mangers to have mild symptoms of lead poisoning. She had been milked out at 8 a.m., so that we were unable to obtain much over 100 cc. each of fore milk and strippings, which were collected and analyzed separately. The lead content by ashing and dithizone colorimetric determination was 0.15 parts per million on both portions. This is several times the amount we have found in the milk of cows on normal feed. A dry cow, being fattened for beef, was also alive, though very thin and suffering from diarrhea and decided lameness (partial paralysis?) forward. She had received the same amount of the ground feed as the milk cows.

We found 50 bushels of the ground feed in a bin. This had been put through the mill twice in one continuous operation and then transferred some 20 feet to the bin.

It had thus undergone considerable mixing before being fed. A large, clean paper bag was filled with the feed from various portions and depths in the bin. The pigment was also sampled, and chemical examination showed it to be typical red oxide of lead (Pb_3O_4).

There was no red pigment visible in the feed, but subsequent microscopic examination by G. L. Keenan of the Microanalytical Division disclosed red lead in extremely small particles, the majority of them passing through an 80-mesh sieve. Three subsamples were taken, by thorough mixing and "quartering," for lead analysis. The results by ashing, dithizone isolation and electrolysis were 532, 496 and 494 parts per million of lead. Assuming the average content to be 507 parts per million (about 0.05%), each cow received approximately 1.65 Gm. of lead in all, administered in two equal feedings on the same day. There is no evidence that the cows received significant amounts of lead either before or after February 7. The weights of the cows were estimated as running from 700 to 800 lb. Taking 750 as the average (equivalent to 340 kilos), it seems reasonable to estimate that the lethal dose of lead for the cow, when administered in the above form and manner, is of the order of 4.8 mg. per kilo of body weight.

As a follow-up, we learned from the herd owner that the Jersey cow and the red cow had survived and were giving about 1 gal. of milk each, early in June, 1938. Accordingly, we visited the farm on June 9, 1938, in time for the afternoon milking and took samples with the same precautions as formerly. A sample was also taken for comparison from one of the Holstein-Friesian cows purchased to replace those lost the previous February. The Jersey cow was in fair condition and the red cow in good condition at the time. The third survivor, the dry cow which became lame as a result of the lead intake had been slaughtered for beef in April, being in good condition at the time, except that she was still lame.

The lead content of the three samples of milk was practically identical, being 0.030 parts per million for the Jersey, 0.028 for the red cow, and 0.030 for the Holstein-Friesian.

All of the cows had no feed other than pasturage since May 5, and the chances of recent lead ingestion would, therefore, seem to be minimal. For about a month after the poisoning outbreak, the Jersey would eat nothing but a little silage. She was then put on a dairy concentrate until May 5. The red cow had aborted within a day or two of the time we took the sample, but the milk was normal in appearance, as were also the other two samples.

Because our specially treated Pyrex glass containers would not take the entire yield of milk from any of the three cows, on this occasion we took the samples by milking about 10 streams from each quarter at the beginning, at the middle and at the end of the milking period in each case. To have taken the sample from the milk pail would, of course, have subjected the milk to the possibility (probably rather remote) of slight lead contamination from the soldered seams.

Summary

1) Eighteen of 20 cows ingesting, on a single day, silage contaminated with red oxide of lead sufficient to furnish approximately 4.8 mg. of lead per kg. body weight failed to survive. The 2 survivors showed symptoms of lead poisoning;

2) Both the survivors were still giving milk and that of the one which had the full dose of lead had a lead content sufficient to render it unsuitable for human consumption;

3) At the end of four months the milk of the survivors did not contain a quantity of lead different from that of cows on a normal diet with no history of lead ingestion.

The consumption of ascorbic acid (vitamin C) in the United States in 1940 was 17 tons. The need for 1943, says *Science*, will reach 100 tons, including that sent to our allies.

Daubentonia Punicea (Cav.) DC. Poisoning in Pigeons

M. W. EMMEL, D.V.M.
Gainesville, Florida

A PIGEON fancier during the month of June freed his homing pigeons from the loft for about an hour each evening that they might have access to green feed in his back yard. During this time, one or two birds died each week showing similar symptoms. The period of illness was short. The droppings were scant, watery, and greenish in color. A pale greenish fluid was vomited by all affected birds. The postmortem lesions of 3 birds were similar: The chief content of the crop was a pale green fluid, the lining of the gizzard was stained brilliant green, and proventriculitis and duodenitis occurred.

The owner observed the pigeons eating seed of the climbing beggarweed, *Meibomia cana* (Gmel.) Blake, which was abundant in his yard, and suspected this of being toxic. Twenty Gm. of the seed of this plant were administered daily in a capsule to each of 2 pigeons until a total of 200 Gm. had been fed to each bird. No symptoms of illness occurred.

An abundance of *Daubentonia punicea* (Cav.) DC. occurred in an adjoining vacant lot. As the seeds of this plant* have been shown by Thomas and Shealy[1] to be poisonous to chickens, an experiment was conducted to determine their toxicity for pigeons.

Six seeds of *D. punicea* were administered daily to each of 4 pigeons. Three pigeons died shortly after 6, 12, and 18 seeds, respectively, had been consumed. The fourth pigeon vomited the seeds daily within six hours after administration, as well as most of the grain consumed during the period of exposure. After 42 seeds had been administered, the droppings were somewhat greenish and the bird was easier to catch but showed no other indication of illness. The bird was killed at this time for pathological study.

Each of 2 additional pigeons were fed 2 seeds of *D. punicea* daily. One bird died eight days later, while the other died on the twelfth day.

The symptoms shown by affected birds were similar: pale green, fluid vomitus; scant, green, watery droppings; and general weakness. The latter was observed most easily when the birds were forced to exercise. Chronic cases showed some emaciation.

The gross lesions observed were: loss of tone in the musculature of the heart and gizzard, brilliant green staining of the lining of the gizzard, and duodenitis. In chronic cases, these lesions were more intense; the spleen was enlarged to approximately three times its normal size and was dark in color; the kidneys were enlarged slightly, and the liver was pale or greenish in color.

In acute cases of poisoning, microscopic lesions were most pronounced in the intestines, liver, and kidneys. Necrotic enteritis involving the tips of the villi was observed in the intestines, particularly the anterior portion. The remaining tissues of the intestines and those of the liver and kidney showed well advanced cloudy swelling. Numerous small foci of necrosis occurred in the liver. Necrosis of individual cells and entire tubules was frequent in the kidneys. Necrotic inflammation also occurred in the mucosa of the proventriculus. Cloudy swelling occurred in the remaining tissues of the proventriculus and in the pancreas. Scattered areas of congestion occurred in the spleen, liver, kidneys, and lungs. In chronic cases of poisoning, the microscopic lesions were similar but more extensive. In addition, the spleen contained numerous deposits of blood pigment while the liver showed similar deposits but of slight extent. The pigeon which vomited the seeds of *D. punicea* within six hours after they were administered showed microscopic lesions similar to those found in acute cases but less severe in character.

In 1928, Thomas and Shealy[1] observed that 9 seeds of *D. punicea* were sufficient

*This plant, formerly known as *Daubentonia longifolia* in Florida, is now known as *Daubentonia punicea*.

[1]Thomas, E. F., and Shealy, A. L.: Daubentonia Seed Poisoning of Poultry. Fla. Agr. Exp. Sta. Bul. 196, (April, 1928): 337-342.

to kill an adult chicken. It is accepted generally that the toxicity of seeds of plants of the same species may change from year to year with variations in environmental conditions. Approximately 150 seeds of *D. punicea* collected in 1942 were required to kill an adult chicken; only 6 to 18 seeds were required to kill a pigeon. In case seeds gathered this year had the toxicity of those collected in 1928, but 1 seed should have been sufficient to kill a pigeon.

Care of Animals in the Jungles

The use of animals in jungle warfare requires the utmost care. Rains make the jungle roads trails of mud, so men and animals must be kept in excellent condition to stand up in jungle maneuvers. Green animals must be trained and seasoned beforehand to keep in serviceable condition and the care must be extended to the equipment. New saddles and riggings should be broken in and every effort made to keep them free of mud and sand. In camp, suitable dunnage or improvised saddle racks are needed. The loosening of cinches from wet latigos must be watched to prevent slipping of the load. Slipping of the pack saddle is of common occurrence on steep grades. Tightening the breast strap is preventive. The lunging of animals in crossing mud holes can inflict severe injuries. As the veterinary officer cannot always inspect the animals, it is advisable to have the column pass in review on leaving the camp where the fittings of packs and saddles and their loads can be inspected. At halts on the trail, the rider or leader should constantly inspect saddle, rigging and the balance of the load. The rider or leader of an animal must be impressed with the fact that he alone is responsible for the care and well-being of his charge. Picket lines are located at the site of water, and sheltered from the sun. Underbrush must be cut level with the ground to prevent snagging and vine burns about the legs may be avoided by removing cut vines from the immediate environs of the line. The picket line should be four or five feet from the ground and drawn taut. Places where thorny shrubs grow are avoided. In camp, animals are watered three times a day. The approaches to streams and water holes must be made accessible to more than one or two animals at a time. Watering more than two animals by one man at the same time ought to be forbidden. Watering should be supervised by a commissioned officer. Salt is essential and granular salt is preferable to rock salt. The authorized salt allowance is a mess-kit spoonful mixed with the grain ration three or four times a week. In the rainy season, protecting the grain and hay with dunnage or tarpaulins is a necessity.

Pack and saddle injuries are the most common cause of disability, and these are preventable by proper care in fitting the riggings. Friction from sand and mud under saddle blankets and mohair pads, and allowing long lapses of time betweeen packing and unloading, especially when the load is heavy, are the causes of many disabling sores. Every sore, no matter how slight, must be treated and watched for screwworm infestation. Soldiers should be taught to recognize the eggs and larvae of the screwworm fly.—[*Capt. Benjamin F. Leach, Veterinary Corps, U. S. Army: Care of Animals in the Jungle. The Army Veterinary Bulletin, 37, (Jan. 1943):20-23.*]

There can be no doubt that human convalescent serum and products obtained from rabbits hyperimmunized against *Leptospira icterohaemorrhagiae* have marked therapeutic effect against leptospirosis (Weil's disease) in young white mice. Effects of these materials are marked if administered on or before the fourth day of the infection.—*Public Health Reports (Larson), Jan. 1, 1943.*

The tiniest amount of anything ever used in experimental medicine is probably the 3/1,000,000,000,000,000 Gm. of a virus injected into a mouse by workers on poliomyelitis at Columbia University. Know any dose smaller?

Chaulmoogra Oil: Age-Old Remedy

Exempting the "seal of science" (which is often late in arriving), longevity of usage is the best testimonial to evoke in behalf of a drug. On that score, *kalawso*, ancient name for oleum chaulmoogra, seems to be the oldest remedy in the medical codexes of the modern world. U. S. D. XXII says "Chaulmoogra oil has been used since time immemorial," and devotes two and a half pages to describing its source, properties, and uses.

Some 3,000 years ago, Hama, leprosy-afflicted King of Benares (India), so the legend goes, repaired in shame to the jungles where he was cured by having to subsist on the fruit of the Kalaw tree. Thus, chaulmoogra oil was launched among the remedies of medical practice for everlasting use. Its repute, therefore, antedates Aesculapius, legendary Hygeia, and Hippocrates of Cos. Yet, one will search the pages of medicine in vain for a more controversial subject than the curative properties of this age-old galenical. The debates narrow down to the question of whether a drug could possibly live on through so many centuries without having "what it takes" to do so. The checks and rechecks of science up to the present time remain as confusing as ever.

G. W. McCoy, medical director (retired) of the United States Public Health Service, in a current article[1] leaves no convincing argument on either the *pro* or the *con* side of the dispute, for, in quoting the opinions of four leprologists none appeared to be willing to go on record as condemning the use of the drug entirely in the treatment of leprosy. And, there the matter rests as of 1942.

The cause of leprosy is attributed to the action of *Mycobacterium leprae*, an acid-fast organism, and, of course, pursuant to the dogma of the bacteriologists, the crucial test of chaulmoogra oil and its derivatives would be their microbe-killing power *in vitro* which its various esters do not lack. The preinfection state which, as in the case of certain chronic hypertrophic dermatites of dogs, may account for the occurrence of the disease in certain persons to the exclusion of others also exposed, does not seem to enter into the arguments. Chaulmoogra derivatives given *per os* are nauseating and repulsive when given over sufficient stretches of time to be effective. Parenterally injected, they are too painful to retain popularity with the afflicted, and topical application for leprosy is not mentioned. The British Pharmacopoeia mentions its use in chronic skin affections, however.

The importance of this subject in veterinary medicine lies in the use of chaulmoogra oil in recent years in the treatment of follicular mange of dogs and probably also in certain undiagnosed dermatites of a chronic nature. Clinical reports have been favorable but controlled experiments are lacking. Inasmuch as follicular mange is not primarily microbic and noncontagious, and yet furnishes a nesting for an abundant flora which disappears as the lesioned skin resolves, the local irritant action of chaulmoogra oil on faulty cutaneous metabolism, obviously inherited by certain strains of canine litters, is worthy of study on the basis of the preinfection state upon which the science of nutrition and genetics are now shedding considerable light.

[1]McCoy, G. W.: "Chaulmoogra oil in the Treatment of Leprosy," Public Health Report, 57 (Nov. 1942), pp. 1727-1733.

Yeast—Its Action and Composition

(An Excerpt)

Yeasts are unicellular plants. Under favorable conditions they grow rapidly and reproduce by budding or fission; under less favorable conditions they may form spores. The yeast cells absorb sugars, minerals, and other substances from the medium in which they are grown, synthesize proteins, enzymes, and other cell constituents, and multiply rapidly. At the same time the medium undergoes important changes. Sugars, originally present or formed from starches or other carbohydrates in the medium, are converted into alcohol and carbon dioxide by enzymes from the yeast, and some other

constituents are removed to become parts of the yeast cells. Yeast not only synthesizes the several members of the vitamin B group, such as thiamin, riboflavin, niacin, pyridoxine, pantothenic acid, choline, para-aminobenzoic acid, and probably others, but also absorbs most of these from the medium. Yeast is, therefore, an excellent source of the B vitamins. Also, yeast can synthesize ergosterol, particularly when incubated in an aërated sugar-phosphate solution, and ergosterol is convertible into vitamin D by ultraviolet irradiation. The other known vitamins either are absent from yeast or present in quantities so small as to be negligible. [*Gladys Leavell: Brewers' and Distillers' By-products and Yeast in Livestock Feeding. Feedstuffs, 15 (Feb. 13, 1943): 27-34.*]

The Semen of the Dairy Bull

The quality of the semen of dairy bulls varies. Seasonal variation studies by Erb, Andrews and Hilton (*Journal of Dairy Science*, Sept. 1942) revealed that the volume and the motility of semen was lowest in July, August and September, and that the sperm concentration and total sperms per ejaculation were highest in the spring months (April, May and June), and significantly superior to summer semen. The average number of abnormal spermatozoa was 25 per cent greater than during the next highest month of the year. The seasonal changes in the bulls studied were, however, not as striking as those in Missouri rams, reported by McKenzie and Berliner in 1937. For these bulls, the average abnormal sperms per thousand were 165, as compared with 700 per thousand in the Missouri rams.

Vitaminers

A novelty in technical words is *vitaminer*, coined by K. Hickman in a paper presented at the Gibson Island Vitamin Conference in July, 1942, and published in the January 15 issue of *Science* wherein the term is defined as "Compounds that act to overcome a given vitamin deficiency (in one or another organism, plant or animal)." *Vitaminer* is needed to distinguish between the chemical structure of vitamins and their activity—a distinction between the molecular formulas and the action of vitamins. Whereas, isomers are compounds of known molecular make up, vitaminers are compounds of known activity which usually possess different chemical formulas.

Eight vitaminers are named: D, K, B_1, niacin, biotin, pantothen, pyridoxin, and para-aminbenzoic acid.

Androgenic Substance in the Feces of Cattle

Urine-free feces were collected from four different sources:

a) lactating cows, on pasture, in various stages of gestation;

b) lactating cows, without access to pasture, in various stages of gestation;

c) unbred heifers, without access to pasture; and

d) mature bulls having limited access to pasture.

The material was dried in an electrically-heated drying oven, ground, mixed with feed of known composition, and fed to Rhode Island Red chicks in varying amounts.

The diets which contained feces from pregnant cows and unbred heifers stimulated comb growth, but retarded development of the testes and ovaries. These effects indicate the presence of one or more androgenic factors in the feces. Feces from bulls, on the other hand, were entirely without effect. This seemingly paradoxical situation in cattle would appear to be the contrasting parallel of that reported for the horse in which the stallion excretes, *via* the urine, large quantities of female sex hormone.

The supernatant material from an 80 per cent alcohol precipitation of feces extract was further extracted for both male and female sex hormones. Tests with immature mice showed that the androgen frac-

tion was not completely free of estrogens.

The failure of any of the preparations used in these experiments to stimulate gonadal development eliminates the possibility of the active factor being a gonadotropic substance. On the other hand, the marked stimulation of comb growth in both male and female chicks, and the depressing effect on gonadal development by both dried cow feces and chloroform extracts of this material, strongly indicate that the active factor is an androgenic substance. The fact that cows, both with and without access to pasture, excrete the active principal in similar concentrations indicates that the androgen is not derived from the diet. [*Riley, G. M., and Hammond, J. C.: An Androgenic Substance in Feces from Cattle as Demonstrated by Tests on the Chick. Endocrinology, 31, (Dec. 1942): 653-658.*]

Cross-Receptivity to Hog-Cholera Virus*

In 1875, Professor Gerlach of the Royal Veterinary School of Berlin reported[1] that *haemorrhagische Follicular-Diphtherie des Dickdarms* (hog cholera) is communicable to man and in 1880, reporting on hog-cholera investigations conducted in 1878-1879 for the United States Department of Agriculture, Dr. H. J. Detmers[2] related what seemed to be an outbreak of that disease in five children of an Illinois family, due, it was thought, to the use of ice cut from a creek into which the carcasses of "swine-plague-affected hogs" had been thrown. The same report relates incidents of the transmission of hog cholera to cattle by contact with hogs, and confirms the diagnoses by the lesions found *post mortem* in the affected cattle.

In 1879, James Law[3] of Cornell University, reported the successful experimental transmission of "swine plague" to lambs, sheep, rabbits, and rats, and appended classical tabulations of his work covering incubation periods, clinical symptoms, and routine post-mortem findings.

In 1939, Dr. Joseph Zichis[4], bacteriologist of the Illinois Department of Public Health, wrote an extensive report on transmission of hog-cholera virus to sheep both by contact and by experimental inoculations. This work was done by Zichis in the laboratories of the Allied Laboratories, at Zionville, Ind. His report refers to previous experimental work of recent years showing the receptivity of various animals to the action of hog-cholera virus (goats, sheep, rabbits, guinea pigs). These experiments proved that sheep can be inapparently affected with hog cholera and that they may possibly be carriers.

*This sketch is published to settle the question of priority in connection with cross-receptivity to hog-cholera virus.

[1]Gerlach, A. C.: "Haemorrhagische Follicular-Diphtherie des Dickdarms, Archiv fuer wissenschaftliche und Praktische, Thierheilkunde, 1 (Feb. 25, 1875), p. 182, cited by Detmers.

[2]Detmers, H. J.: "Second Supplementary Report on Swine Plague, Infectious Diseases of Swine and Other Domestic Animals," Special Report, No. 22, pp. 36-66, United States Department of Agriculture, 1880.

[3]Law, James: *ibid.* pp. 68-94.

[4]Zichis, Joseph: "Studies of Hog-Cholera Virus," J.A.V.M.A., xcv (Sept. 1939), pp. 272-277.

The Treatment of Mange

As in other wars the incidence of scabies in man has increased, in spite of the reduction of the household-animal population. In World War I, equine mange was a veritable nightmare on all fronts. The number of equine cases in the German army during that war was 56,592 with a loss of 17,000 from death or slaughter. Though the use of sulfur is traditional, it is by no means the treatment of choice. Certain German preparations have enjoyed a popular vogue. Tetraethylthiuram monosulfide, originated in the United States, was used on 13 confirmed canine cases of sarcoptic mange, 3 of follicular mange, 1 case of equine symbiotic mange and typical case of "neck mange" in a cow. In all 21 canine cases, 1 equine case and 8 bovine cases were treated, but only the cases in which the presence of the parasite was demonstrated are reported. The results were gratifying. In the strength of 2 per cent, the drug was nonirritant to

dogs, cats and rabbits. The solution is sponged into the skin at 3- to 4-day intervals. [*Jennings, S., M. R. C. V. S.: "The Treatment of Mange with Tetraethylthiuram monosulfide," The Veterinary Record, liv (Aug. 15, 1942), pp. 330-331.*]

Torticollis in Rabbits

During the past months, we have had various occasions to attempt the correction of torticollis or "wry neck" in rabbits.

The rabbits were affected sporadically and were sent to us with a usual history of a "stroke" with subsequent drawing of the head to one side. In general, only mature stock was affected. One animal, shipped from Anderson, Indiana, had been sick for three weeks. The owner lost several animals from this condition during the past four years.

Upon clinical examination, most of the affected rabbits would display a spasmodic contraction of the cervical muscles, which in turn gave rise to an unnatural lateral retraction and rotation of the head. The animals would be unsteady on their limbs, causing them to fall, or roll over, and, having lost their equilibrium, they would have considerable difficulty in getting up. In general, the affected animals were listless, and their appetite poor although there was, of course, considerable mechanical difficulty in prehension due to the paralysis of the neck muscles and the peculiar twist of the head.

A diagnosis of torticollis-polyneuritis, due to vitamin B_1 deficiency, was made and the appropriate line of treatment was followed: In addition to alfalfa hay, the diet was enriched with natural vitamin B_1 concentrates of ample cereal grains (whole wheat, oats, and soy beans) as well as synthetic vitamin B_1. The latter was given at a rate of 1.5 mg. (500 units) daily.

Complete recovery occurred in from three to seven days. Usually, a relaxation of the cervical muscles was noted as early as two days following this treatment.—*Klaus M. Friedburg, D.V.M., and George Gordon, D.V.M., Chicago, Illinois.*

Sheep Poisoned by Algae

On page 230 of the March (1943) issue of the JOURNAL, mention is made of the toxicity of algae, the green scum common to stagnant ponds.

Fred Remer, former deputy state veterinarian, Havre, Montana, once investigated a heavy loss among range sheep that had been driven to water in the Missouri river. Most of the sheep died within a few hours after drinking river water.

As careful investigation of the surrounding range revealed no overgrowth of poisonous plants, the true nature of the loss appeared undetectable, whereupon, the sheep herder stated that when the sheep waded into the river to drink he noticed what appeared to be several green balls floating on the surface. Acting on this cue, horses were ridden into the river and waded about. Masses of the type of algae identified later as "vasserbloom" began to rise to the surface. Tests proved that this form of submerged algae was very toxic for sheep.—*A. H. Quin, Kansas City, Missouri.*

BCG in Dogs*

Dogs vaccinated with BCG subcutaneously, intramuscularly, and intrabronchially were not manifestly protected against intrabronchial injections of virulent tubercle bacilli. Although the survival time was longer than in the controls, the individual differences were so great that the averages may have no significance. There was no consistent difference in the size or composition of the pulmonary lesions of the treated and untreated dogs. Caseation and cavity formation was about the same in both groups. While the lymph-node reaction (hypertrophy and hyperplasia) was greater in the untreated dogs during the first two months, no differences could be observed later.

*Abstract from "Experimental Pulmonary Tuberculosis in the Dog," by Gunn, Sheehy, Caldwell and Mills, Northwestern University. American Review of Tuberculosis, 46, (Dec. 1942): 612-624.

NUTRITION

MATERIAL FURNISHED BY THE COMMITTEE ON NUTRITION

Wartime Problems of Feeding and Nutrition

R. C. MILLER, Ph.D.

State College, Pennsylvania

A PRACTICAL discussion of nutrition and livestock feeding, as well as feeding itself, is difficult at the present time owing to the general unavailability of the many feedstuffs which have been considered essential for a sound feeding program.

Nevertheless, in spite of difficulties, the livestock industry is called upon to increase production of livestock products in 1943 to insure the continuance of the task undertaken by the nation.

There are shortages, per animal unit, of many feeds and supplements. There is shortage of farm labor. There are bottlenecks and priorities, ceilings in prices and restrictions on transportation, rumors and actualities. The outlook is uncertain but there is a bright side also. Veterinary science and biochemistry have made notable advances in recent years. Today, the animal industry is better equipped than ever before with knowledge and with some of the tools required to deal with the problem.

Finally, there is no restriction on the plain common sense which is going to play a big rôle in the solution of this problem. With the use of common sense combined with science, there are three things which will yield large returns to livestock production and not require the expenditure of much money or of the restricted materials:

1) The first is to stress, as never before, the paramount importance of the best sanitary conditions for all classes of livestock. Interest in sanitation should focus upon control of infectious and parasitic diseases. It is wasteful to try to properly nourish animals that are parasitized and sanitation is the chief step in the prevention of that condition.

2) Next, the greatest possible use of pasture should be emphasized — that is, good pasture, not only an exercise lot, although that is worth something. It is known that good permanent pasture can not be developed in one year or for one season but there are forage crops such as perennial rye grass that will serve as emergency pasture. Alfalfa is preferred but other legumes such as sweet clover and ladino clover (which is comparatively new in some sections) give good returns.

There is a shortage of fertilizer and fencing is scarce, but in any event, the use of all the pasture possible for all classes of livestock is helpful. Green grass and forage contain something which has not been fully identified or duplicated. Pasture furnishes something that can not be bought in a bag. Its greatest use will bring good returns in terms of growth, vigor, and health. To prolong the use of green grasses throughout the year, grass silage, which can now be made without the use of molasses or acid, will bring good returns in a limited feeding program.

The fullest use of pasture embraces another example of common sense which doesn't cost much and is too often forgotten, and that is plenty of sunshine. Many farmers are very stingy with sunshine for

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From the Department of Biochemistry, Pennsylvania State College.

their livestock. As pointed out below, the vitamin D obtained through sunshine reduces the amounts of some of the minerals required and allows the limited quantities which can be provided by the feed, to be better utilized. There was never a time when year-around sunshine for livestock would bring bigger dividends.

At this point, it should be emphasized that increased production quotas will not be attained unless every livestock producer responds. Most of the large producers are already doing everything possible and, probably, increases can not be expected from them. The small producer must now be reached—those with 2 to 5 cows and a few pigs or chickens. Many of this group can redouble their efforts. The responsibility of increasing production falls to them.

3) Foremost among the specific problems confronting feeders is that of protein. This is especially serious from the viewpoint of total protein supply and sources. Conditions imposed along our coastlines by warfare have greatly decreased the production of fish meal, and importations of animal protein have been restricted. Domestic tankage production is good but the total supply per animal is below the present needs. Fortunately, the animal-protein problem does not apply to all livestock. The microörganisms in the digestive tract of ruminants supply these animals many essential amino acids, or protein fragments, required for growth and development. This is not true in animals with a simpler digestive tract. In swine and poultry, the animal-protein problem is of great concern. Whereas, cattle and sheep thrive on plant protein, pigs and chickens have requirements for animal proteins which, unfortunately, war does not change.

The best substitute for tankage, meat scraps, and fish meal as far as protein is concerned appears to be properly processed soybean oilmeal. The quality of protein it supplies seems to be adequate for swine and poultry. The protein content of their rations can be maintained by its use.

It is not known how far the supply of soybean oilmeal will extend in the present feeding program. The demand may exceed the supply, but effort is being made to increase the supply as much as possible. Soybeans are being shipped to the South to take advantage of the southern mills which, ordinarily, are used only a part of the year for crushing and pressing peanuts and cottonseed.

The animal protein available should be conserved by including it only in the rations of young, growing animals. Once they are off to a good start with growth well under way, the shift should then be made to plant protein as it will suffice for finishing and fattening meat animals.

Although the dairyman does not need animal protein, he must use his ingenuity to keep up, as well as he can, the protein content of his feeds by the wise use of soybeans, linseed, and gluten. The use of roughages such as alfalfa will help out.

What are the dangers of changing from animal to plant protein in feeding swine? (The question may also be asked of poultry.) First, vegetable proteins are deficient in the calcium required for bone development. Ordinarily, bone meal would be used in this situation. But, the present supply of bone meal is inadequate and, therefore, can not be depended upon. Limestone is the next choice as a source of calcium but it does not supply phosphorus. Therefore, its use in unlimited amounts is out of the question. The use of limited amounts of limestone (1 to 1.5% of the ration) is, however, practicable. The mineral situation will be partly taken care of in this way, especially if the animals receive adequate vitamin D.

For swine and cattle as mentioned above, sunshine will serve the purpose of supplying vitamin D to good advantage. Irradiated yeast, a relatively low-priced product, may also be used for four-footed animals. Fish oils, if available, will serve the purpose for poultry. If not available, a synthetic vitamin D of the new activated, animal-sterol type is satsifactory. Another possible substitute for bone meal is rock phosphate. This natural product supplies

both calcium and phosphorus but caution must be used in the particular product fed, since much of the rock phosphate contains fluorine in toxic amounts. The manifestation of this toxicity are thickening, softening, and weakening of the bones, associated with characteristic histological changes. Defects occur also in the teeth which become soft and worn. The results are lowered food consumption, impaired growth, and diminished milk production as well as breeding difficulties in the case of cattle. These conditions do not develop rapidly but are inevitable after prolonged high intake of fluorine. There is available a limited amount of rock phosphate which has had the fluorine removed. This is perfectly safe to feed. Where rock phosphate is used as a mineral supplement, its fluorine content must always be considered. No mineral supplement containing more than 0.1 per cent of fluorine should be fed.

A deficiency of vitamin A may be found in a present day feed. White corn and white-capped corn rations are low in carotene, the precursor of vitamin A, unless provision is made to supply that factor. Yellow corn is the most universally and generally available source of carotene and should, therefore, be used if available. Again, as in the instance of animal protein, these products should be fed mostly to the young, growing animals. Fortunately, vitamin A can be stored in the organs and tissues of most animals. So, if a continuous supply of vitamin A is not available, the body reserves can carry the animals over for a period. Pasture enters this picture, particularly good, green forage which is an excellent source of vitamin A, or rather of its precursor, carotene.

In respect to vitamin B, restricted feeding conditions do not help the situation. In the case of cattle and other ruminants, these vitamins are not a problem owing to the synthesis of vitamin B factors in the digestive tract. There is evidence, however, that swine need, at least, five of the B vitamins: thiamin, riboflavin, niacin, pantothenic acid, and pyridoxine. In the past, it has been supposed that these factors were supplied in the ordinary good ration. With a restricted ration, however, B-factor deficiencies may easily occur. These are manifested by unthriftiness, rough skins and coats of hair, scouring, vomiting, goose stepping and incoördination, and growth failure.

Dried brewers' yeast should supply the recognized B factors for swine, but liver meal is the only thing discovered thus far which supplies some of the unknown factors. It is sometimes thought that the ordinary, good ration will supply all of the B factors needed by growing pigs as long as the feed is consumed in sufficient amounts. Should anything like influenza or chilling cause a reduction of the feed intake, these deficiencies may become apparent. It appears that many of our good rations may be adequate though not rich in the amount of B factors they furnish. Sometimes the situation can be saved by the use of a single B vitamin, niacin for instance. Anything that restores appetites and brings feed consumption up to normal will correct matters. There has been some success in fermenting the feed of swine—going back to the old swill-barrel idea which may not be at all bad.

In poultry, the demands for B vitamins are, perhaps, more exacting than in swine. Apparently, factors in addition to those enumerated for swine are required. It is necessary to select carefully the ingredients of poultry rations and to use vitamin B carriers such as skimmed milk powder, distillery by-products, and yeast to satisfy these requirements.

The distillery by-products are a good source of some of the B factors for both swine and poultry. They are residues of alcohol production—dried distillers' solubles, and dried distillers' grains (30% protein) with the solubles added. They are suitable for swine and furnish some of the B factors required by poultry. These products are relatively new sources of vitamins and while not available in unlimited quantities, they will apparently serve a partial source of supply of some of the B factors from now on. In addition, some

of the pure synthetic B vitamins are now becoming cheap enough to warrant consideration of their regular use in some rations.

With further respect to B vitamins, there may be danger in the present plan involving the use (in the livestock feeding program) of large amounts of the surplus wheat which has been in storage for some time. It is probable that this wheat has lost some of its nutritive value during storage, so that it is not, as is often claimed, equal to corn as a replacement for a part of the corn in the ration. Wheat lacks the vitamin A contained in yellow corn. Storing possibly lowers some of its content of vitamin B factors. Such wheat should be used cautiously and never substituted for more than one-half of the corn in a ration. A gradual substitution, beginning with a small amount, is wise in any case.

Last summer, I heard a definition of a vitamin which expresses an interesting point of view:

> A vitamin is an alleged component of a food [feed], drug, or cosmetic which is placed in the product by the advertising department, and assayed in terms of sales resistance. An underdosage leads to an increased sale of the competitor's product, and an over-dosage leaves a bad taste in the mouth of the consumer.

This definition is given because in the present situation with respect to the feeding of livestock, it is felt that the industry [livestock] may be confronted with the exploitation of all sorts of supplementary products whose real value may be difficult to appraise. It is a difficult and complex situation which will not be solved by any one thing that comes in a bag or bottle. Rather, the best judgment and coöperation of all who are qualified will be needed to carry through a livestock feeding program which will even begin to fulfill our needs, not only during 1943, but also during the next few years.

Phosphorus for Animal Feeding

A case has recently come to the attention of the Committee on Nutrition in which anthrax developed following a dairyman's use of raw bone meal as a source of phosphorus in a dairy ration. The mixers of feeds and mineral supplements would not think of using this dangerous product. But, individual feeders, who have learned the value of a phosphorus supplement in the rations of farm animals, may be tempted because of the present shortage of steamed bone meal, to substitute the raw product which may be carrying the spores of anthrax and blackleg.

At present, there are three safe sources of phosphorus for animal feeding: steamed bone meal, calcined rock phosphate (from which the fluorine has been removed by heat), and dicalcium phosphate. Farmers and stockmen should be warned to make certain that mineral supplements and feeds to which minerals have been added contain the phosphorus in one of the above forms.

The Protein Feed Situation

The section on Nutrition in the JOURNAL has called attention to the lack of proteins for the feeding of farm animals and the possible effect of these shortages on the 1943 food production program. On February 17 and 18, leaders of the feed industry, officials from the United States Department of Agriculture, and nutritionists from agricultural colleges met in a conference which led to the adoption of a voluntary coöperative agreement, designed to insure the best use of all available protein for the various classes of livestock.

Essentially, this program involves a voluntary limitation on the amounts of animal and vegetable proteins that will be used in mixed feeds and supplements.

The program is aimed, primarily, at the conservation of proteins of animal origin (meat scrap, fish meal, tankage, liver meal, and dried milk by-products) which are so essential for growth and reproduction of swine and poultry. The agreement limits the percentage of these animal proteins which can be used in the feeds for all classes of swine and poultry and also in calf "starters."

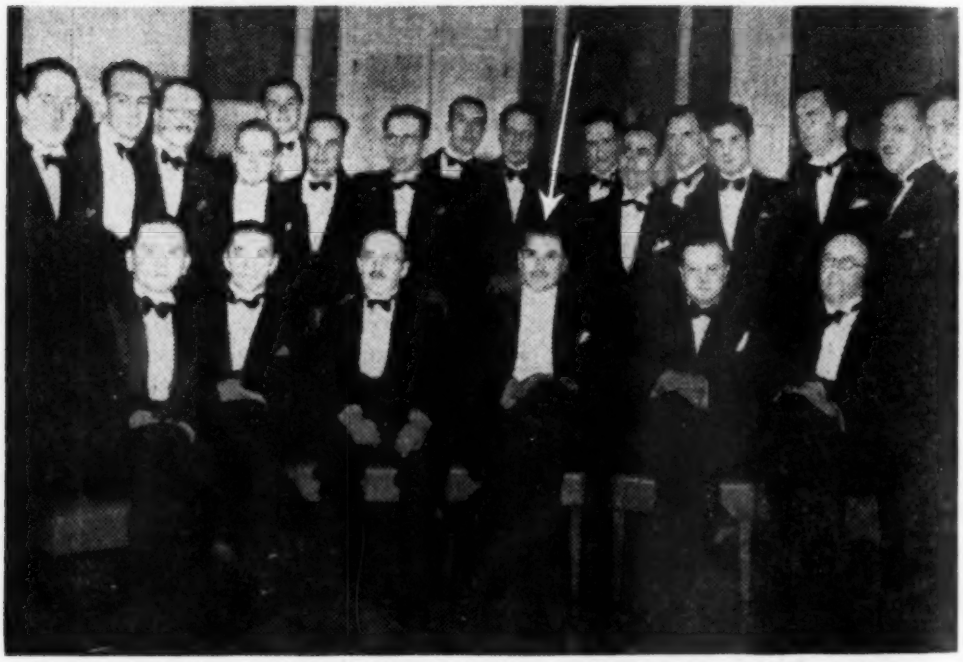
The conservation of proteins of vegetable origin also is considered to the extent that the total protein content of rations of

dairy animals is to be held at from 12 to 18 per cent, depending on the type of roughage fed.

The decreased percentage of proteins of animal origin in the rations may lead to a slight reduction of the growth rate of poultry, swine, and young calves. It may affect egg production to a small degree. If, however, the limited amounts of animal proteins are properly mixed with other feedstuffs, as recommended in this agreement, satisfactory growth, production, and reproduction should result without causing any protein deficiencies.

There is no question but that this voluntary agreement between the Feed Industry Council and the officials of the United States Department of Agriculture will greatly assist our 1943 food-production program. The men who have planned this agreement and who are executing it deserve our congratulations.

Veterinary Medicine in Colombia, S. A.



It has been gratifying to receive information from Colombia, South America, as to the progress of veterinary medicine in that important livestock country, for which we are able to thank the thoughtfulness of Resident Secretary C. A. Rojas Maldonado, member of the Colombia Veterinary Medical Society, a going organization devoted to the cause of scientific animal production, and the national economic panorama of that American neighbor.

The picture we reproduce herewith was taken at a gathering convened to award the annual prizes for the best work in veterinary science for 1942. The first prize went to Dr. Jorge E. Albornez for researches on granulomatosis hyphomicetiana and second prize to Dr. Carlos Alberto Rojas M., for his work in the radiographic study of the skeletal development of the calf. Important newspaper clippings giving the details of this brilliant event and of other activities of the national veterinary society are included in President Guzmán's communications.

M. Jacob
1879—1943

Dr. M. Jacob, treasurer of the Association since 1918, died on March 22, 1943 at his home in Knoxville, Tenn., after a brief illness. He had not been in good health for the past two years and only recently had been urged by his physician and the president of the University of Tennessee, where he was dean of agriculture, to take a much-needed rest. He was 64 years of age.

M. Jacob

Dr. Jacob was born Jan. 6, 1879, a native of northeastern Pennsylvania. He received his preliminary education at Honesdale (Pa.) High School, graduating in 1896 and from there went to the University of Pennsylvania where he received his veterinary degree in June, 1899. While in school, he won the J. B. Lippincott Award for the member of the senior class attaining the highest scholastic average throughout the course. After serving as house surgeon in the University Veterinary Hospital for one year, Dr. Jacob accepted temporary appointment with the meat inspection division, Bureau of Animal Industry, with headquarters in New York City.

In November, 1900, he moved to Knoxville, Tenn., to engage in general practice and to be part-time instructor in veterinary science at the University which he served with distinction for so many years. There was a brief interlude (1904-05) during which he was professor of veterinary practice at Iowa State College under the late Dr. John H. McNeil, who was the first veterinarian to hold the position of dean in the division of veterinary medicine at Ames.

Returning to the University of Tennessee as professor of veterinary science and member of the animal husbandry faculty, Dr. Jacob grew steadily in the esteem of his colleagues and became recognized throughout the state for his services in animal husbandry and disease control. He was state veterinarian from 1915 to 1921, and was then appointed head of the animal husbandry department for both resident teaching and the experiment station. In 1937, he was appointed dean of the college of agriculture of the University and was serving in this capacity at the time of his death.

Quiet, unassuming but extremely capable, Dr. Jacob was respected for his sound judgment in all of his professional and executive work. He held many distinguished posts and discharged them all with honor and rare ability. Always public spirited, he preached animal health up and down his state not only as an economic benefit but also as a public health necessity, joining with and gaining the respect of such men as Dr. Olin D. West, present secretary and general manager of the American Medical Association, who was for years an outstanding figure in health work in Tennessee.

In six more months, Dr. Jacob would have completed twenty-five years of uninterrupted service as treasurer of the American Veterinary Medical Association. He was a past president of the United States Livestock Sanitary Association, the Southern States Veterinary Medical Association, the Tennessee Veterinary Medical Association, and the Knoxville Rotary Club.

He is survived by his widow and one son, Dr. William Jacob, a physician.

A grateful association and a host of friends mourn the loss of a faithful colleague and a true gentleman.

EDITORIAL

Fifty Years a Veterinarian, 1893 — 1943

Fifty years ago, without fuss or prophecy, a modest man of keen mind came quietly forward and inscribed a six-letter name on the roster of the veterinary profession. He was L. Van Es, now head of the Department of Animal Pathology and Hygiene, University of Nebraska, scholar, teacher, savant, and friend, who has left and is still leaving a heritage to the American people that few professional men will ever match. Although it now comes out that the Doctor's professional biography begins in Nebraska before the turn of the century, it was while practicing in Alabama and working for his doctorate degree in medicine that his abbreviated name began to shine bright enough to need no literal expansion. To his closest friends, the "L." has been as unknown as the generic "Es." All that mattered was that the six letters spelled the name of a great man in the veterinary circle. Recalling the making of North Dakota, which was admitted into the Union since this writer entered the veterinary profession and its agricultural college was still unborn, it was inspiring to watch Van Es and Crew, both Ontario alumni, shape "health of farm animals" in that state for future generations. That was 1903 to 1918 when Dr. Van Es answered a summons to a broader field for research and investigation—Nebraska, whose veterinary medical association celebrated his golden anniversary in veterinary medicine with a testimonial banquet and other honors on February 4, at the Cornhusker Hotel in Lincoln. Dean R. R. Dykstra, School of Veterinary Medicine, Kansas State College, delivered the eulogy, and President Scott of the association presented tokens of admiration to its honored guests —Dr. and Mrs. Leunis Van Es.

L. Van Es

Dr. Van Es represented the United States at the International Veterinary Congress, The Hague, 1909, served a term as president of the United States Live Stock Association (1927), was honored with the degree of doctor of science by the University of Pennsylvania (1935), and is listed in *American Men of Science* and *Who's Who in America*. These are but the outward expressions of the achievements which brought them—the authorship of classical monographs on farm-animal diseases based upon facts, common sense, and unassailable personal research—all literary gems of the sort time does not efface.

The Birth and Hardships of Veterinary Education*

Disease of farm animals is closely linked with human disaster. Visions of impending revolution brought about the founding of veterinary schools to prevent hunger. In the struggle for survival, man's all-powerful weapon is food, and the farm animal is its source. It's all that simple. Yet, ever since veterinary education took the form of a collegiate study, its path has been strewn with thorns and flanked to travel a rough and rugged road.

Unconscious of his full debt to farm animals, man has never cultivated a keen understanding of the profession that guards the main source of food from declining below the level of human needs. In its trek to "who knows where," collective mankind has been just that delinquent—dumb. It matters not at what period of veterinary school history one takes the inventory, facts are found to prove that the veterinary educational system developed in the face of hardships that could not have been surmounted but for the inseparable cohesion of farm animals and human welfare. Hunger is its ancestor and popular indifference its handicap.

Veterinary education was founded in collegiate form with the declared intention to build up a profession of animal medicine comparable to that of the learned physician. The stated bases were (1) *rural economics* and (2) *urban transportation* with military strength as an additional motive. The time was the reign of Louis XV and the place was Lyons and Paris. Zoötechnics and horseshoeing were therefore, two of the main branches of the curriculums. Conformation and dissection of animals, materia medica, pharmacy, chemistry and botany were the minor studies leading to proper understanding of the major ones. In the absence of precedent to serve as guide, it was more than 20 years after the start before that much of the schedule was established. In the manner of speaking, charting the course of the ship over the unknown sea was a baffling problem for the navigators. The sea was stormy from the start and deliberate attempts to scuttle the new ship were numerous. The horseshoers who had a monopoly of the "veterinary business" did not take kindly to the founding of veterinary colleges and they evoked the influence of politicians in high places to destroy the idea of replacing them with college-trained veterinarians. It is well-known history that but for the fearless backing of Secretary of State Bretin, the founding of veterinary colleges in France would have been abandoned. His successor, Maurepas (1780), declared, *"Ces ecoles constituaient pour l'etat une charge sans avantage"* (These schools are of no advantage to the state), and he proceeded to abolish them. Spurred on by this and other political influence in the upper cadre, the horseshoers, led by LaFosse, master mind among them, spread the rumor that the veterinary schools of Lyons and Paris were going to flood the country with quacks. (It is, however, to the credit of certain groups of horseshoers, who backed the veterinary schools to the limit of their influence.) The arguments, for and against, were bitter. A venomously-turned politician (1790) is quoted as saying that "curing Miss Bretin's little dogs" is the only valid claim the schools had. This seems to be the first poke of history at small-animal practice.

About this time veterinary education was menaced by the French Revolution. Being a project of the king (now Louis XVI), the colleges of Lyons and Alfort were as much of a target of the mob as he and Marie Antoinette. Extravagance was charged. (The total annual appropriations for both schools were around $12,000. Salaries ranged from $250 to $500 a year.) Here the politicians blundered. Believing that these schools would be "sent to the guillotine," they were placed under the direction of the *Comite d'agriculture et des arts* (Agricultural and Arts Committee). This was in 1794, which marks the date when veterinary education became agriculturally dominated. Blatant, townborn

*Reprint from *Corn States Needle*, Summer (1942) issue.

Robespierre was unaware that *rural economics* was not that easily killed off, even as blood flowed in streams on the Place de la Concord as the tumbrels rolled in. The founders of Alfort had purchased a farm near the school for teaching purposes, but the horseshoers were preaching that theirs was the only worthwhile branch of zoötechnics. The fight went on without remission. Here veterinary education can be linked with the Reign of Terror. Director Philibert Chabert of Alfort was jailed, ostensibly for a ride to the guillotine. Though the charges trumped up against him were never pressed, he nevertheless spent seven months "in the shadows." His humble origin probably saved him. He was the son of a horseshoer and a horseshoer himself in the Seven Years War who had worked his way through Lyons and by diligent study rose to the Alfort directorship. The arrest of Chabert while the fight of quackery *versus* scientific veterinary medicine was going on, was never explained. One fights quackery at the risk of being smeared, if not jailed.

The cause of the French Revolution was hunger, and hunger alone. The founding of veterinary colleges was intended to relieve hunger. But, the people of then as the people of now, were not aware that the cause of their hunger was diseases of farm animals, not the waste of the aristocrats, as the mob contended.

The hardships of veterinary education —preventive of hunger—have been real, and they have been continuous because diseases of farm animals are rich in spoils which education prevents.

[The above analysis of the first efforts to build a veterinary profession with formal education as the foundation is more than just that much interesting reading material. The writer paints a word picture that time (180 years) did not erase. To clarify what he was driving at, the author should have brought the story down to 1943, since the enemies of scientific animal medicine were never subdued and generalized ignorance of its objectives still remains.

This excellent historical sketch should have included the tribulations of the veterinary faculties of Dresden (1774), of Hanover (1777), of Berlin and Munich (1790). When these universities were ordered to establish veterinary faculties, the professors and students of the other departments treated the innovation with contempt in the form of intracollegiate ostracism and jeerings which took many decades to live down. In London (1791), Canada (1862), New York (1875), veterinary education was neither publicly sanctioned nor glorified and had to sink or swim without public support or popular encouragements. Throughout the United States there was no effort made on the part of the people to sanction veterinary education until the 1920's when, through private effort of the AVMA, public support of veterinary colleges began.

As of 1943, there is still much to be desired in respect to budgets, physical equipment, teachers' salaries, and social rating. Moreover, as in the eighteenth and nineteenth centuries, only a few of the more thoughtful economists stop to weigh the value of farm-animal health in the march of man.—Ed.]

The Literary Style of Scientific Papers

Primarily, a scientific paper is intended to instruct, not to entertain. Poetic elegance, slang, humor, sarcasm and impolite criticism are kept out at the risk of seeming dull and lifeless. Lively, illustrative insets written in pleasing style are, however, never out of bounds. They may cultivate a closer personal acquaintance with the author's personality, although to get a high rating in the panel of science, ideas must be put over to the reader free of human appeal and verbal ornamentation.

Per contra, and this is the reason for raising this subject, editorial material of a nontechnical nature may play with the habitual, spoken language of its readers and commit no sin. What do you think?

The newer the livestock pursuit, the less is the quackery practiced in its operation—fur farming for example.

Veterinary Medicine in the Making of Nations

Since veterinary colleges were established in the middle of the eighteenth century and knowledge of farm-animal diseases was assembled for the purpose of founding a profession of veterinary medicine, the nations which seized the idea conveyed have prospered. The contention will bear the analysis of the critical mind. The step, taken for the purpose of developing animal husbandry on a profitable basis, marks the birth of European nations of this period. The veterinary-minded countries thrived, the others lagged or perished completely through the aggression of the strong. The last victim of neglected veterinary medicine is the most populous nation of the present time—China.

This hackneyed reminder is inspired by a letter just received from Dr. Ching Sheng Lo, supervisor of a veterinary biological laboratory at Southgate, Chengtu, Szechuan, China, showing that in finding itself fighting with its back to the wall, China is pondering its neglect of animal industry, and striving, perhaps too late, to overcome the omission, but hopeful that it may somehow survive the harrowing onslaught of a much smaller country.

The letter is dated November 22, 1941, and was addressed to Martin M. Kaplan, V.M.D., 5919 York Road, Philadelphia, Pa. All of the facts to be drawn from overlooking the part domestic animals play in national welfare can be texts for long sermons on the wisdom of maintaining veterinary education of high rank and of applying its teaching in approved fashion. Let the letter speak for itself:—

Your kind letter dated October 9th is at hand. It was certainly a pleasure to know that you are so sympathetic in our struggle with Japan. The Chinese are always grateful for what the Americans—individually and collectively—have done for us in the past, present and will undoubtedly do in the future.

Our great Southwest, which is not invaded by Japan, is well adapted for animal husbandry but owing to the scarcity of well-trained veterinarians we have been unable to adequately meet the situation. Many institutions have been looking for veterinarians for the past two or three years and did not succeed in getting one. The situation is acute. Personally, I do not know how to remedy it, for we know that veterinarians are not made in a day.

It is very kind of you and the veterinary profession in America to send us the latest literature. It is exactly what we need at present. I am teaching at the National Central University. We have a department of animal husbandry and veterinary medicine. The department is coöperating with the provincial bureau of animal industry and I am supervising the bureau's serum plant. We are preparing the following products: rinderpest vaccine and serum, hog-cholera serum and virus, hemorrhagic septicemia serum and anthrax-spore vaccine and serum, and mallein.

Recently the Ministry of Agriculture established a bureau for the purpose of improving our livestock and to study animal diseases. It is almost impossible to get men to fill the various positions who are well qualified. From my point of view, good veterinarians are urgently needed in China at present and in the future.

Dr. Kaplan writes:—I feel that it is the urgent duty of the veterinary profession of the United States to aid our colleagues in China in their struggle against our common enemy, Japan. At present a collection of the latest literature is being undertaken at the library of the University of Pennsylvania, School of Veterinary Medicine. I have been assured that any money that is donated by the veterinary profession of the United States will be utilized solely for the purchase of veterinary medical supplies and equipment. Let us honor ourselves and our profession by answering with great liberality the plea of a deserving nation. Please send checks to: China Aid Council, 123 South Broad Street, Philadelphia, Pa.

Obviously, the veterinarians of the United States, in view of our country's alliance with China, are morally obligated to heed this appeal for aid, but the main object of presenting the subject in this form is to encourage the Chinese to found and support a classical veterinary service that would lead to wealth-producing, soil-improving, and food-making developments in their country. Again to be emphasized is that the absence of a farm-animal-disease control service is the sure road to poverty, decline, and final elimination of any country. Animal diseases must not be weighed only by the wealth they take from the owners nor by the current shortage of food they produce. The main detriment is more far-reaching. The raising of animals declines and is finally abolished as a human enter-

prise because the breed improvement needed to succeed, is not possible where disease is not subdued. Animal diseases not scientifically handled ruin the farmer and in the end wreck his country. In other words, the populations of 1943, wherever oriented, have the choice between maintaining a sufficient veterinary service in the form of colleges, research laboratories, supervising officials and practitioners or descending to the level of impecunious vegetarians.

Rinderpest, anthrax, hog cholera, hemorrhagic septicemia and glanders (*loc. cit.*) are but five of many farm-animal diseases which destroy countries with greater certainty than battleships and bombs.

Much Ado About the Technics of Milk Inspection

Milk inspection is done because milk and dairy products may transmit certain infectious diseases to consumers if the milk comes from diseased cattle or if it is contaminated subsequent to production and/or pasteurization.

Connoisseurs of milk inspection from *alpha* to *omega* insist that their art requires (1) an engineer, (2) a physician, (3) an executive, and (4) a veterinarian (thanks), and they emphasize that none of these is competent to do the work of the other.

Granted that all this is literally, true, the small town hasn't a ghost of a show to provide its citizens with safe milk. Its taxpayers can't afford to pay the cost of this array of experts, this quartet of college men drawing big salaries for doing a little job, that is, little in volume—the task of supervising the production and delivery of a few cans of milk to a few hundred taxpayers. The presumption is that the health officer physician couldn't possibly be a good executive and that the veterinarian couldn't possibly differentiate filth from cleanliness, nor a cool from a warm milkhouse. Obviously, his veterinary college training disqualifies him from reading thermometers. The crux is the engineer (kind not stated) who, as the story goes, must understand the complexities of the pasteurizing plant. Wonder what the health officer or the veterinarian does when his watch goes wrong.

Speaking only for the small town (the large cities belong to a separate category), the question of founding milk inspection narrows down in the minds of practical men to (1) educating the people as to its need, (2) employing the local veterinarian on a part-time basis to go into a huddle with farmers to plan sanitation which brings dividends to them in terms of healthy cows, more milk, and more milk consumption, and (3) framing regulations on handling, pasteurizing, bottling, and delivering which can be enforced by a reasonable amount of checking and supervising without throwing the town budget out of balance. Speaking from quite a few years of personal experience and numerous interviews with small-town veterinarians, we feel qualified to say that the failure of the public health services in so many places, in this connection, is due to lack of practical approach. The small town folk, once they have been convinced that safe milk and safe meat are worth going after, will consider the *modus operandi* of procuring them no deterrent. What is true about choking health measures down people's throats does not apply to the average town populations, judging from observations made as a producer of milk, as a small town citizen, and as a big-town veterinarian. Rural milk and meat hygiene lags because you just have to put the mule before the cart to amble along. And, believe it or not, the town of but a few thousand isn't going to pay a big salary to a man who knows how to use a monkey wrench in a pasteurizing plant.

The smoke-smudged lantern of rural practice is passing to the limbo. The Rural Electrification Administration announces that 70 per cent of 153,238 New York farms are now lighted by electricity and that 4,482 additional farms of that state are going to be electrified through funds allotted for the construction of new lines.

Nazi contempt for humanity is based on the doctrine that Man will cringe and surrender when cowed by torture and privation.

CURRENT LITERATURE

ABSTRACTS

A Filtrable Virus, the Cause of a Respiratory-Nervous Disorder in Chickens

A respiratory-nervous disorder of chickens has become increasingly important since it first appeared in northern California flocks early in 1940. Most of the birds which became affected were 3 to 10 weeks of age. Some outbreaks were observed in younger chicks and in mature hens. The average mortality was probably between 5 and 10 per cent. The respiratory phase of the disease was similar to infectious bronchitis. Nervous symptoms, which did not always occur in a large percentage of affected birds, consisted of muscular incoördination, tremor of the head or body and paralysis of the legs. Lesions frequently found were a cloudiness of the air sacs and mesentery and congestion or edema of the lungs. The infective agent was present in the air sacs, lungs and tracheas and produced the disease in other chickens when inoculations were made intranasally, intratracheally, subcutaneously or directly into the crop. The disease was transmitted by pen contact. The results of filtration experiments demonstrated that the disease is caused by a filtrable virus. The results of cross-immunity experiments indicated that the virus of the respiratory-nervous disorder is distinct from the virus of infectious bronchitis and from that of infectious laryngotracheitis. [*D. E. Stover: A Filtrable Virus, the Cause of a Respiratory-Nervous Disorder in Chickens. Am. J. Vet. Res., 3, (April, 1942): 207-213.*]

The Effect of Artificial Cryptorchidism on the Prostate Gland of Dogs

Bilateral castration causes retrogressive changes and atrophy of the prostate gland in adult dogs. Unilateral castration does not appear to influence the prostate gland. Transplantation of one testis to the adominal cavity, with or without removal of the other testis, also seems to be without effect on the prostate gland. In these experiments, normal testes were placed in the abdominal cavity and the subsequent degenerative changes involved only the tubular cells; no changes of the interstitial tissue were observed even after as long as 798 days. It appears probable that the interstitial cells of the testis, even when placed in the abdomen, secrete sufficient male hormone to maintain the prostate gland in normal condition. [*Carl F. Schlotthauer and Jesse L. Bollman: The Effect of Artificial Cryptorchidism on the Prostate Gland of Dogs. Am. J. Vet. Res., 3, (April, 1942): 202-206.*]

Some Observations on the Pathology of Pneumonia of the Food-Producing Animals

Thirty-one cases of pneumonia in cattle, sheep, and swine were studied. A variety of microörganisms were isolated.

The gross pathology was usually confined primarly to the apical and cardiac lobes, but often involved the diaphragmatic and intermediate lobes.

A histopathologic study of the lungs revealed lesions of bronchopneumonia that were either acute or chronic. The bronchopneumonia was patchy throughout the lobules and appeared to have begun as a bronchiolitis.

The bronchioles were more or less filled with an exudate made up primarily of polymorphonuclear leucocytes and a few macrophages. In some cases the epithelium was swollen, while in others desquamation took place.

The alveoli surrounding the respiratory bronchioles were usually filled with a similar type of exudate. The alveoli beyond these areas contained, as a rule, relatively more macrophages than polymorphonuclear leucocytes. Some also contained fibrin and serous exudate. The walls of the alveoli were thickened by congestion, edema and exudative cells. Atelectasis was almost invariably present to some extent. Hemorrhage and emphysema were observed in some instances.

In the sections from sheep and swine lungs, necrosis and areas of potential suppuration were sometimes present. The pneumonic lungs of sheep frequently showed a marked hyperplasia of the smooth muscle.

In the subacute cases, fibrosis was often observed in the peribronchial areas, adventitia, walls of the alveoli, septa and pleura. Some of these cases also showed peribronchial and perivascular infiltrations with lymphocytes and macrophages.

In the acute cases, the septa often showed

cellular exudate, distention of the lymphatics, fibrin, and serous exudate.

Inflammatory changes were seen in the pleura and blood vessels of some cases. [*Robert F. Langham, Frank Thorp, Jr., Ronald T. Ingle and L. B. Sholl: Some Observations on the Pathology of Pneumonia of the Food-Producing Animals. Am. J. Vet. Res., 3, (April, 1942): 139-145.*]

Food and the War

Those working on food and nutrition are embarrassed by the phrase "Food Will Win the War." The expression lacks balance. Food is no substitute for the men who face and fight with guns and bombs. Better to admit that food will be a major factor in the winning, and that men fight best when properly nourished, but in preserving manpower other factors besides food have to be considered. The anoxia, high altitudes, and cold in aviation and the smothering heat of tank work in the desert are prevented not by sufficient food of the usual sort packed and shipped months before, but by special diets, for the men in these branches require a different regimen from that of the ground soldiers. "Trying it out on the dog" does not suffice, nor does dehydration to preserve shipping space. Special emergencies have arisen from this war which place a heavy burden on the workers in the fields of food and nutrition, who have the serious job of providing food adequate for every physiological need. Researches to that end will go a long way toward winning the war and ridding the world of war hereafter. [*Charles Glen King, Scientific Director, The Nutrition Foundation, Inc.: Food and Nutrition as Related to the War, Science, 97, (Feb. 5, 1943):129-131.*]

Testicular Neoplasms of Animals

Fifty-two testicular tumors from animals were examined and classified as teratoma (1 case), seminoma (33 cases), benign interstitial-cell tumor (1 case), malignant interstitial-cell tumors (2 cases) and Sertoli-cell tumors or tubular adenomata (15 cases). In addition, there were 12 cases of nodular hyperplasia of interstitial cells.

Testicular tumors appear to occur more frequently in animals than in man. There is no predisposition in dogs for one breed to be more prone than others to tumor formation, which occurs in the span of life parallel with the cancer age in man.

Regarding malignancy, the author states: "No records of any follow-up of testicular cancer in animals have been found, but the statement by Schlotthauer, *et al.*, (1938) that dogs do not live long enough for tumors to metastasize is a peculiar one, since cases of canine cancer of many different organs with widespread metastasis are common enough. The span of life of an animal must be irrelevant, as the period taken by untreated malignant tumors to mature, metastasize, and kill is probably comparable in man and animals, *i.e.*, a relatively short one."

Twenty of the surgical canine cases which were treated by orchidectomy were followed up, some for many years. The serious prognostic outlook usually adopted for human cases is not applicable to dogs, most of which survived for at least two years after orchidectomy without any sign of ill health. The possibility of earlier treatment of canine cases being responsible for the higher cure rate does not arise, as the primary tumor in most of them seemed to be as fully advanced as human cases usually are when they appear before the surgeon. The author later states: "The conclusion might be drawn that a carcinoma in the dog which is histologically identical with the human variety does not behave in the same malignant way."

[*J. R. M. Innes: Neoplastic Diseases of the Testis in Animals, Jour. Path. and Bact., 54, (Oct. 1942): 485-498.*]

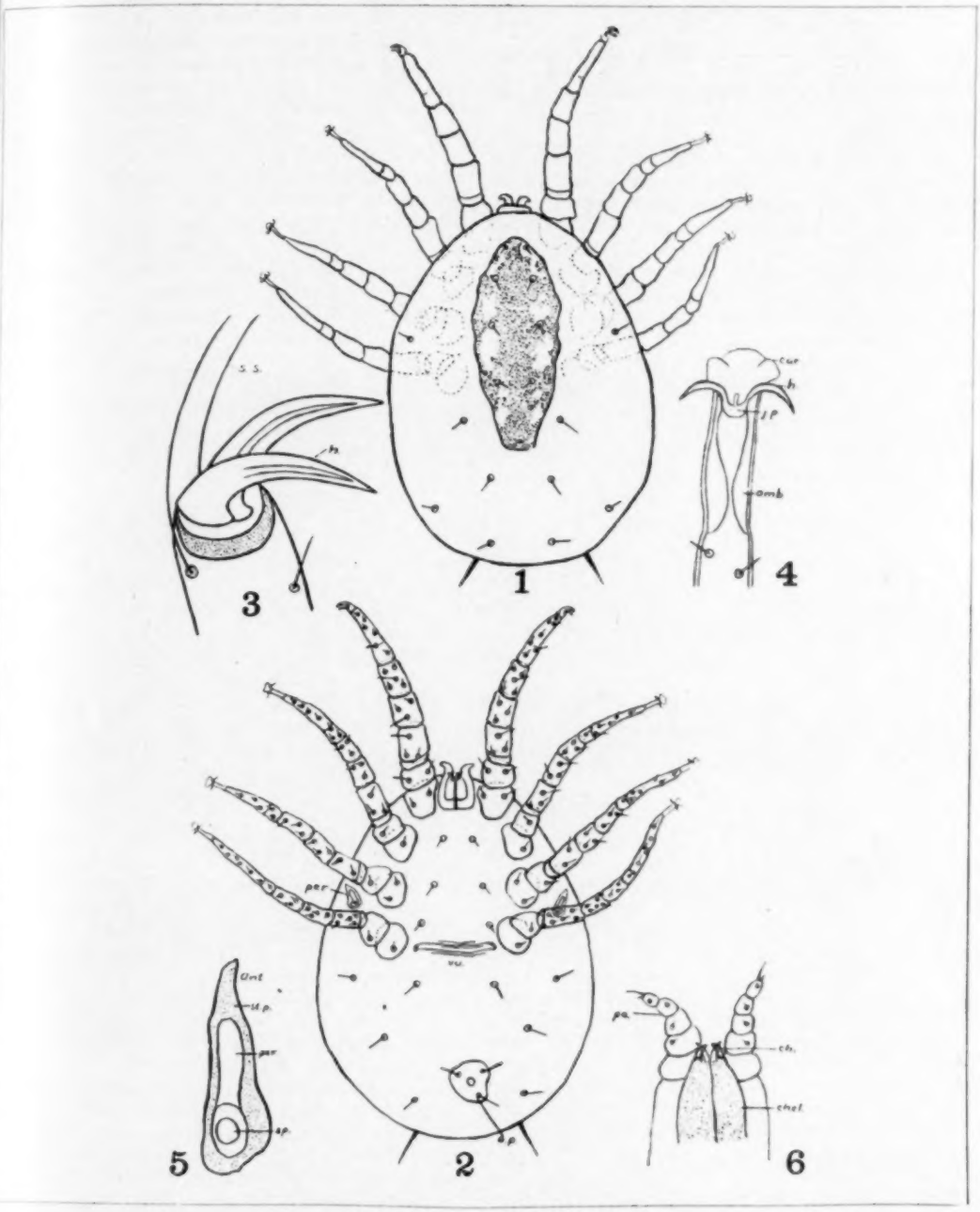
Pneumonyssus Caninum

(Illustration on opposite page)

The arachnoid mite, Pneumonyssus spp., in the upper respiratory tract of dogs may be of more common occurrence than heretofore suspected. Although reported by Banks (1847), Haan and Grijns (1901), Virzthum (1930), and Chandler and Ruhe (1940), it was not until 1941 that the authors found a case in their scope of observation. The subject was a Foxhound from a pack located near Philadelphia. The parasites were discovered accidentally in the facial sinuses during the course of postmortem examination of the dog's brain. Thereafter, other cases were recognized, one a nervous, 6-year-old terrier on Aug. 6, 1942, suffering from distress about the head, incoördination of movements, excitation, and convulsions. The autopsy disclosed the presence of these mites in the frontal sinuses. The morphology of the mite is described and illustrated.

The symptoms described may not be reliable inasmuch as some cases do not exhibit them in that degree. Sneezing, shaking the head, rubbing the nose, and mild nervous reactions are suggestive. [*H. M. Martin and M. J. Deuber: Ascariasis (Pneumonyssus sp.) of the Upper Respiratory Tract of the Dog, University of Pennsylvania Bulletin, Veterinary Extension Quarterly, No. 19, (Jan. 15, 1943):21-28.*]

Before there can be any sane future for this world of ours, we're going to have to face self-denial, slaughter, black times to save ourselves and allies from defeat—Bullard in the American Legion Magazine.



—After Martin and Deuber, 1943

Pneumonyssus Caninum

Fig. 1.—Dorsal view of gravid female showing dorsal shield. x50.

Fig. 2.—Ventral view of gravid female showing vulva (vu), peritreme (per.) and anal plate (a.p.). x50.

Fig. 3.—Tarsus of first leg showing gripping claws (h.) and sensory setae (s.s.). x600.

Fig. 4.—Tarsus of second leg showing caruncle (car.), claw (h.), jointed piece (j.p.) and ambulacrum (amb.). x400.

Fig. 5.—Peritreme (per.) showing stigmal plate (st.p.) and spiracle (s.p.). x350.

Fig. 6.—Head parts showing palpi (pa.), chelicerae (chel.) and chelae (ch.). x200.

BOOK NOTICES

Manual of Bacteriology: Kelser and Schoening

Nothing can arrogate the placed occupied by bacteriology in the affairs of mankind. As a builder of human welfare, knowledge of microbic life has no match among the discoveries and inventions. No walk of life was not changed for the better through its coming. From the magnifying glasses of Borel (1653), Kirtcher (1659), Leeuwenhoek (1675), to the electron microscope of 1943, glorious pages were written into the history of man. Bacteriology prepared the ground, laid the foundation, and cut the patterns for the progress of the modern world. In the practice of medicine, keeping fresh in mind its beginnings, its developments, and its present status is duty No. 1. The publication of a fourth edition of General Kelser's *Manual of Bacteriology* since 1927 is proof that that duty was not shirked by American veterinarians. While the sequence speaks well for the book itself, it also reveals a gratifying appetite for classical literature—gratifying because the demand for such books is an accurate speedometer of the profession's advance.

When the third edition was approaching the out-of-print stage, and revision was not possible owing to the author's wartime military duties Chief Harry W. Schoening, Pathological Division, U. S. Bureau of Animal Industry, volunteered to undertake the task. All will approve the coauthorship. As the senior author graciously declares in the preface, "Future editions of *Manual of Bacteriology* will be found improved." Participating in their respective specialties were Shahan, Seibold, Miller (W. T.), Crawford, and Dikmans, of the Beltsville group. This combination of authors adds to an unusually valuable treatise on veterinary bacteriology and, by reason of their specializations, arrests the very attempt to question what they have set down. In fact, the fourth revision of Kelser's work must be taken as the last and latest word on the subjects covered.

The reader will appreciate the old names of microörganisms, parenthesized after the new names adopted by the Society of American Bacteriologists—new names which may seem confusing to those not familiar with (nor interested in) the reasons for the reclassifications made from time to time. Comparing Crookshank[1] (1890) with Kelser (1943), the contrasts are mainly in classification, not in pathogenicity of microbic flora.

The introduction (Part I, 7 pages) is a fascinating brief of history, everyone professing a knowledge of medicine englobes in his ken. While authors feel impelled to speak of the animalcules discovered in the seventeenth century, the real history of bacteriology begins in the 1860's and its foundation as a science was laid in the two decades following—the days of Pasteur, Koch, Nicolaier, Babes, Kitt, Lister, Roux, and others whose names will live in the ages. Beyond this excellent introduction which brings the advance of bacteriology up to date are 47 chapters divided into eleven parts:

II) Bacteriological Methods
III) Infection and Immunity
IV) Bacterial Variations
V) Pathogenic Organisms and the Class Schizomycetes
VI) Pathogenic Fungi
VII) The Protozoa
VIII) The Filtrable Viruses and Rickettsiae
IX) Serology
X) Hematology
XI) Preparation of Veterinary Biological Products
XII) Bacteriological Examinations of Milk

Since the revision is recent and the authors outstanding, one must leave the precepts of the text to the mercy of its readers. Like many of the new scientific books, there are contradictions in usage. Thoughtfully and correctly, the reader is told (page 23) that generic names are like one's own family name, meaning that Brown, Smith, Kelser, Schoening, Streptococcus, Bacterium, Salmonella, etc., etc., are proper nouns. Then reading on (page 123), one may quote "certain types of Streptococci and Staphylococci produce toxins." The generic words are capitalized in one paragraph and not in the next. We quote, "Various streptococci and staphylococci produce a substance . . . ." The use of capitals in one place and not in the other and fabricating plurals for proper nouns are the issues. But why rail? Medical writers find the rules too hard to obey, too inconvenient and are making scientists throw stones and editors weep. What a job for the Committee on Nomenclature.

A reliable book by dependable authors, covering the vast field of applied bacteriology in a clear and concise fashion—a revision in fact, not a reprint of an old edition—is the impression obtained by combing its text. To American veterinarians, be assured, a treatise on bacteriology by Kelser and Schoening will not be dismissed as just another book. [*Manual of Veterinary Bacteriology, Fourth Edition, by Raymond A. Kelser, D.V.M., A.M., Ph.D., Brigadier General, United States Army, Chief, Veterinary Division, Surgeon General's Office, Washington, D. C., and Harry W. Schoening, V.M.D., Chief, Pathological Division, Bureau of Animal Industry, and Assistant Chief, Bureau of Animal Industry, United States Department of Agriculture, Washington, D. C. 719 pages. Illustrated. Cloth. Williams and Wilkins Company, Baltimore. 1943. Price $6.50.*]

[1]Manual of Bacteriology by Edgar M. Crookshank, M.D., Bacteriologist, Royal College of Veterinary Surgeons, London. 455 pages, Graphic illustrations and color plates. J. H. Vail & Company, New York, 1890. Obviously, the first veterinary bacteriology published in English.

THE NEWS

The 1943 Meeting

The Executive Board has voted to hold a two-day Wartime Conference in 1943 instead of the usual four- to five-day meeting. The Conference will be held in St. Louis, August 25-26, and the eightieth annual business meeting of the Association will be held in connection therewith. The headquarters will be the Jefferson Hotel where all sessions will be held.

The program will be devoted to the reduction of losses due to preventable diseases of food-producing animals, to tropical and exotic diseases of animals as war and post-war problems, to veterinary manpower quotas for the armed forces and civilian needs, and other phases of veterinary work directly related to the welfare of livestock production and public health in wartime.

Sessions of the Executive Board and of the House of Representatives will be held to act upon the official reports and special problems connected with the war.

The eightieth annual meeting will dispense with scientific, technical and commercial exhibits, clinical programs, social functions, and other distractions. There will be no section meetings. Except those of the Executive Board and House of Representatives, all sessions will be general. The election of officers will take place as usual.

The many special problems created by the war in all fields of work have made it inadvisable to cancel completely the usual meetings of professional organizations. It is, therefore, felt that a war-conference type of meeting will be of direct and widespread benefit.

Jefferson Hotel, St. Louis, Mo.

Committee on Animal Health of National Research Council Meets

The Committee on Animal Health recently selected by the National Research Council met at the headquarters of the Council in Washington, D. C., on March 4, 1943, for the purpose of organizing the work of the committee. Chairman George H. Hart, University of California, presided. All members of the Committee were present including R. M. Bethke, Ohio Experiment Station; J. G. Hardenbergh, Chicago; C. C. Hastings, Williamsville, Ill.; H. W. Jakeman, Boston, Mass.; Charles A. Mitchell, Hull, Que.; W. E. Petersen, University of

Minnesota, and Robert F. Griggs, chairman of the Division on Biology and Agriculture, National Research Council.

Chairman Hart and Dr. Griggs reviewed the origins of the Committee, the need for it, and its relationship to other committees of the Division of Biology and Agriculture. A number of problems of immediate importance to the production and conservation of food-producing animals were discussed and selection made of a few to which immediate study can be given as a contribution to the overall food production program.

Dr. Frank G. Boudreau, Chairman of the Food and Nutrition Board of the Council, met with the Committee in the afternoon and reviewed the work of the Council with special reference to its wartime duties and responsibilities, and pledged the support of the Council to the work of the Committee on Animal Health.

On March 5, members of the Committee were invited to attend the meeting of the Council's Food and Nutrition Board. At this session there were present some forty leaders in nutrition for the consideration of food problems that are undergoing intensive study in relation to the needs of industry, the civilian population and the armed forces if the effectiveness of the nation's wartime efforts is to be maintained. The discussions of shortages of certain essential foods, especially meats and dairy products as sources of protein, emphasized the need for controlling animal diseases and reducing losses from preventable diseases as a definite contribution to the food production program.

Can You Help Locate These Lost Members?

The aid of JOURNAL readers is solicited in locating the following members, mail to whom has been returned to the Association's central office. The last known address of each is given. Should you be able to provide information as to present residence, your advice *via* postcard or letter will be greatly appreciated.

Adams, James L., Rt. 2, Box 160, Greeley, Colo.
Blostein, Morrie E., 819 S. Main St., Horseheads, N. Y.
Blumenthal, Jacob C., Brainerd, Minn.
Carter, Richard W., Gen. Del., Tawas City, Mich.
Castro, Fred, Gen. Del., Omaha, Neb.
Claus, Norman G., Purcellville, Va.
Cohen, George, Pine Camp, N. Y.
Etchison, K. L., 924 S. Pine St., Lansing, Mich.
Gates, Silas B., 4018 S. 25th St., Omaha, Neb.
Hagler, Curtis E., 5224 50th S. Seattle Ave., Kirkland, Wash.
Heisel, Allen M., Cascade, Colo.
Henkel, Ernest L., 907 Myrtine St., Enumolaw, Wash.
Holtzman, Jacob, Station Hosp., Army Air Base, Fort Douglas, Utah.
Hupp, Lynn D., 1339 E. Armour, Kansas City, Mo.
Keller, G. E., 204 S. 1st St., Montevideo, Minn.
Krenek, Emil, Rt. 2 Box 55, Deming, N. Mex.
Loiler, M. E., Farragut, Iowa.
McFarlane, J. F., Main St., Payette, Idaho.
McGill, Dana T., Mt. Sterling, Ill.
McKim, O. E., c/o Commanding Officer, Walter Reed Gen. Hosp., Washington, D. C.
MacEachern, Gordon, A.A.B., Jacksonville, Fla.
Manley, David O., 527 S. Florida, Columbus, Kansas.
Marks, Bernard, Vet. Hosp., Fort Benning, Ga.
Mathis, Rudy C., State Veterinarian, Atlanta, Ga.
Moffat, Geo. Colvin, 5732 W. Cermak Rd., Cicero, Ill.
Neidig, C. C., Aitkin, Minn.
Niffenegger, D. L., Camp Gordon, Ga.
Robertson, D. S., Fort Sam Houston, Texas.
Rushmore, Rowland W., Army Vet. School, Army Med. Center, Washington, D. C.
Sarde, Robert M., Army Veterinary School, Army Med. Center, Washington, D. C.
Schmille, H. F., Westboro, Mo.
Siver, Dougal, 429 Wrightwood Ave., Apt. 1-N, Chicago, Ill.
Smith, Chas. L., Rt. No. 1, Harveyville, Kansas.
Snodgrass, W. B., Ford Ord, Calif.
Thompson, J. C., Dept. of Agri., Olympia, Wash.
Vance, Arthur, Vernal, Utah.
Whitmore, George, 716 W. Iowa St., Urbana, Ill.
Wingerter, A. R., R. R. No. 1, Big Rapids, Mich.

Joint Committee on Foods Votes to Temporarily Discontinue "Seal of Approval"

On January 29, the U. S. Department of Agriculture issued Food Production Order No. 7 relating to pet foods. It requires pet food manufacturers to limit the animal protein content to 8 per cent, and the total protein content to 24 per cent, by dry weight, of such foods processed prior to July 1, 1943. Exempt from this restriction are pet foods supplied to the armed forces. For the 6-month period ending June 30, 1943, each manufacturer is directed to restrict his pet-food production to 50 per cent of the amount by dry weight which he produced during the calendar year 1941 or 50 per cent of 4 times the amount by dry weight he produced during the last quarter of 1942, whichever is greater. It should be pointed out that this does not curtail total tonnage produced, 50 per cent, as this order is to be effective only until July 1, 1943. Thus, a manu-

facturer can produce the tonnage of food manufactured in the same period of 1941.

On February 17, the Joint Committee on Foods met in Chicago with representatives of manufacturers of approved dog foods. Presidents W. W. Dimock of the American Veterinary Medical Association and Joseph B. Engle of the American Animal Hospital Association were also present.

The meeting was called to ascertain the feasibility of continuing the present coöperative relationships and to determine the changes, if any, which would be necessary to comply with government regulations and meet the ingredient, transportation, and other shortages now manifesting themselves. The morning session was devoted to a thorough discussion of the various problems confronting the manufacturers and the Associations.

The consensus seemed to be that, under the federal dog-food order, the best product which could be produced would provide for not more than growth and maintenance of dogs. Present requirements for the use of the seal provide that a food must be capable of meeting at least a growth and maintenance standard determined by biological tests on rats and dogs. The manufacturers' representatives present were of the opinion that it would be difficult to consistently obtain sufficient quality ingredients to meet such standards and everyone present was opposed to seeing these standards lowered.

The Joint Committee on Foods convened in executive session in the afternoon. At that session, the executive secretary was instructed to transmit notice to all holders of contracts providing for termination of these agreements May 1, 1943.

To aid in explaining this action, there follow answers to some of the questions reaching the Committee from members of the Associations, producers of animal feeds and pet owners.

1. Why was such action necessary?

a) Because of difficulties encountered by manufacturers of dog foods in obtaining adequate supplies of quality ingredients.

b) Because control methods employed by the Associations are difficult to maintain when frequent changes in formulas may be required if factory production is to be maintained.

c) Because Food Production Order No. 7 restricts the amount of protein concentrates which can be used in manufacturing dog foods.

2. Is rationing of ingredients used in preparation of dog foods?

Yes. Limitations have been ordered on the use of animal and vegetable protein concentrates and fish-liver feeding oils.

3. To what extent are protein concentrates limited?

Order No. 7 "requires pet food manufacturers to limit the animal protein content to 8 per cent and the total protein content to 24 per cent by dry weight."

4. What are the principal ingredient shortages which prompted the issuing of this order?

Meat, meat scrap, meat meals and tankage, fish and fish meals; dried milk, dried buttermilk, dried whey; bone meal; vegetable protein concentrates such as soybean oil meal, peanut meal, etc.

5. What is responsible for creating these shortages?

The increased demand for protein concentrates used in feedstuffs, which are fed to livestock and poultry, for producing the food required to meet the goals set by the government to supply food for the armed forces, lend-lease, and domestic consumption.

6. Will it be possible to manufacture a *complete* dog food under this order?

Probably not. However, "complete dog food" should be defined. The Committee's interpretation has been that such products, when fed as the sole source of nourishment, should provide for the following normal functions:

a) Lactation. Capacity of a food, when fed to a female, to provide for an adequate supply of nutritious milk, nourishing the puppies for four weeks and their partial nourishment for two additional weeks, the puppies not being permitted any other source of nutrients during the first four weeks.

b) Gestation. Capacity of a food, when fed from conception to parturition, to provide adequate nourishment for the female and developing fetuses so that puppies when born will be normal and healthy.

c) Growth. Capacity of a food, when fed to puppies beginning at the age of 6 weeks, to produce a constant gain in weight through the most critical growth period.

d) Maintenance. Capacity of a food, when fed to mature dogs, to provide for constant weight and proper nourishment under average normal conditions.

7. Must all dog foods be complete to qualify for the seal?

No. But such foods must be of a quality to meet growth and maintenance requirements and must be so labelled as to show their limitations.

8. Under present restrictions is it possible to manufacture a product which meets all requirements for the seal?

Yes, temporarily. Nevertheless, it would be difficult for the Associations to maintain the type of control which has been employed in the past.

9. Could the following criterions be attained and the product manufactured to comply with the government Pet Food Order?

(a) Lactation—doubtful; (b) Gestation—

probably; (c) Growth—possibly; (d) Maintenance—yes.

10. If a growth and maintenance requirement can be met why should the seal be discontinued?

a) Because frequent changes in formulas would make it impossible to supervise properly the products if present control methods are to be employed.

b) Because the inspection of ingredients would require constant supervision as their quality is fluctuating widely under wartime production conditions.

c) Because the time required for properly conducting a biological assay on rats and dogs, assembling the data, submitting ft to the Advisory Council and Joint Committee on Foods requires at least four months. By the time a test has been completed, the product may no longer be manufactured using the same quality of ingredients.

d) Because of revision of government regulations; thus, of necessity, manufacturers would have to adjust formulas to comply with limitation orders.

It was the consensus of the Committee and the manufacturers' representatives that every effort should be made to maintain the present organization and functions of the Joint Committee on Foods and that if possible a substitute plan should be developed and submitted for approval. It was further agreed that should the work of the Joint Committee be discontinued with intentions to reorganize after cessation of hostilities, it might prove difficult to rebuild the organization and re-institute the work. It was proposed that the Associations permit the use of a statement on the labels of dog foods which have been tested and accepted as wartime rations by the Joint Committee on Foods of the Veterinary Associations. This proposal was considered favorably since it would assist the purchaser of dog foods in selecting the best products available. If the functions of the Committee are completely discontinued, there would be no active professional organization to aid with some of the public relations problems which constantly confront the industry and the profession; it would cancel a source of authoritative advice on the feeding of dogs under wartime conditions. The numerous inquiries and requests for advice indicate that the work of the Committee is more important now than ever before and that every effort should be made to continue its functions.

The Joint Committee on Foods has submitted to the manufacturers an alternate plan which would provide for the continuation of the testing work using methods adaptable to present day conditions.

M. L. MORRIS, *Executive Secretary,*
Joint Committee on Foods.

James Farquharson Elected to Executive Board

The polls for election of a member of the Executive Board to represent District VI (Arizona, California, Canal Zone and Central America, Colorado, Mexico, Nevada, New Mexico and Utah) closed on March 5, 1943. O. V. Brumley and C. W. Bower, of the Board of Governors, served as tellers to count the ballots while in Chicago on March 15, and certified the election of James Farquharson, Professor of Surgery and Clinics, Division of Veterinary Medicine, Colorado State College, Ft. Collins.

The election of Dr. Farquharson is for the unexpired term ending in 1946, formerly filled by the late W. L. Curtis of Los Angeles.

APPLICATIONS

The listing of applicants conforms to the requirements of the administrative by-laws—Article X, Section 2.

First Listing

BODEN, ANTHONY A.
14437 Michigan Ave., Dearborn, Mich.
B.V.Sc., Ontario Veterinary College, 1935.
Vouchers: C. E. Turnbull and A. L. Tow.

BUZBY, GORDON P.
Huntingdon Pike & Shady Lane, Fox Chase, Pa.
V.M.D., University of Pennsylvania, 1942.
Vouchers: D. G. Lee and J. W. Vansant.

CONSTANCE, L.
Parkfield, Gravelly Hill, Birmingham, Eng.
M.R.C.V.S., Royal (Dick) Veterinary College, 1940.
Vouchers: G. S. Muir and H. W. Steele-Bodger.

EASH, ALDEN T.
14437 Michigan Ave., Dearborn, Mich.
D.V.M., Michigan State College, 1938.
Vouchers: C. E. Turnbull and B. J. Killham.

HARE, HOBART.
16 W. Main St., Newark, Dela.
D.V.M., Alabama Polytechnic Institute, 1941.
Vouchers: H. McDaniel, Jr., and J. L. Cherry.

LESLIE, J. H.
Canada Packers Ltd., Peterborough, Ont., Can.
B.V.Sc., Ontario Veterinary College, 1939.
Vouchers: H. Worton and W. Moynihan.

MCCLELLAN, D. J.
Insp-in-Charge, Canada Packers Ltd., Peterborough, Ont., Can.
B.V.Sc., Ontario Veterinary College, 1917.
Vouchers: H. Worton and W. Moynihan.

MANLEY, PHILIP C.
Malta, Ohio.
D.V.M., Ohio State University, 1938.
Vouchers: E. W. Roberts and B. H. Edgington.

Parkhill, Wm. Lee.
613 Dominion Public Bldg., Winnipeg, Man., Can.
B.V.Sc., Ontario Veterinary College, 1941.
Vouchers: W. R. Giesbrecht and A. G. Misener.

Richter, Carl M.
10 Chestnut St., Newville, Pa.
V.M.D., University of Pennsylvania, 1937.
Vouchers: H. H. Harz and F. E. Lentz.

Robertson, James F.
390 Prospect St., Berea, Ohio.
D.V.M., Ohio State University, 1938.
Vouchers: P. R. Carpenter and N. R. Berthold.

Somers, Robert K.
205 Post Office Bldg., South St. Paul, Minn.
D.V.M., Michigan State College, 1936.
Vouchers: A. T. Ostendorf and D. D. Tierney.

Stein, J. S.
1508 N. 54th St., E. St. Louis, Ill.
D.V.M., Alabama Polytechnic Institute, 1939.
Vouchers: O. E. Jung and O. W. Seher.

Taylor, V. G.
Leipsic, Ohio.
B.V.Sc., Ontario Veterinary College, 1940.
Vouchers: C. W. Fogle and E. V. Hover.

Walker, R. V. L.
21 Hampton Ave., Ottawa, Ont., Can.
B.V.Sc., Ontario Veterinary College, 1926.
Vouchers: C. A. Mitchell and J. A. Baker.

Whitcomb, F. L.
P. O. Box 611, Bismarck, N. Dak.
D.V.M., State College of Washington, 1929.
Vouchers: F. C. Driver and G. J. Worner.

Second Listing

Arenas, Enrique J., Nataniel 814, Santiago, Chile.

Bittencourt, Oity Guimaraes, Escola Superior de Veterinaria, Caixa Postal 567, Belo Horizonte—Est. de Mintas—Brazil.

Briney, E. B., Bennington, Kansas.

Dietrich, L. E., P. O. Box 1116, 408 Harding, Wichita, Kansas.

Fretz, H. L., Atwood, Kansas.

Gouge, R. E., 711 W. Main St., Sedalia, Mo.

Gradess, Morton, York Rd. and Washington Lane, Jenkintown, Pa.

Haines, Chas. E., P. O. Box 345, Winfield, Kansas.

Harrison, D. G., Box 46, Ringoes, N. J.

Jackson, Chas. W., 116 E. Madison St., Iola, Kansas.

Johnson, E. C., Mankato, Kansas.

Jones, Leon V., 22041 Beech St., Dearborn, Mich.

Kenzy, Sam George, 1500 N. 5th St., Temple, Texas.

Ker, William O., Station Hosp., Camp Tyson, Tenn.

Kerns, Robert L., 1940 N. Prospect Ave., Milwaukee, Wis.

McCannon, Willis B., Med. Dept., Army Air Base, Lake Charles, La.

McVaigh, Frank, Kincaid, Kansas.

MacNamee, J. K., Dept. of Pathology, Alabama Polytechnic Institute, Auburn, Ala.

Meinershagen, B. H., 109 E. 18th St., Higginsville, Mo.

Mitchell, Chas. J., 167 Brant Ave., Brantford, Ont., Can.

Padfield, Edwin Thomas, 5530 Vineland Ave., North Hollywood, Calif.

Rattray, J. E,. 10750-101 St., Edmonton, Alberta, Can.

Shannon, J. Vernon, Hq. 103d Infantry Division, Camp Claiborne, La.

Spencer, W. H., 310 East Park, Yates Center, Kansas.

Steele, E. H., Neodesha, Kansas, R. F. D. No. 1.

Tierkel, Ernest S., 328 W. 89th St., New York, N. Y.

Ward, Victor, P. O. Box 38, Atascadero, Calif.

Williams, C. V., Marshall County, Frankfort, Kansas.

1943 Graduate Applicants

The following are graduates who have recently received their veterinary degrees and who have applied for AVMA membership under the provision granted in the Administrative By-Laws to members in good standing of junior chapters. Applications from this year's senior classes not received in time for listing this month will appear in later issues. An asterisk (*) after the name of a school indicates that all of this year's graduates have made application for membership.

First Listing

Alabama Polytechnic Institute*

Adams, Charles E. R., D.V.M.
Kensington, Md.
Vouchers: F. P. Woolf and E. S. Winters.

Anderson, John, D.V.M.
P. O. Box 191, Delray Beach, Fla.
Vouchers: F. P. Woolf and E. S. Winters.

Beaty, R. W. Jr., D.V.M.
606 N. Purdy St., Sumter, S. Car.
Vouchers: F. P. Woolf and E. S. Winters.

Blalock, Avery Lamar, D.V.M.
Nicholls, Ga.
Vouchers: F. P. Woolf and E. S. Winters.

Bowen, Samuel Reid, Jr., D.V.M.
Tifton, Ga.
Vouchers: F. P. Woolf and E. S. Winters.

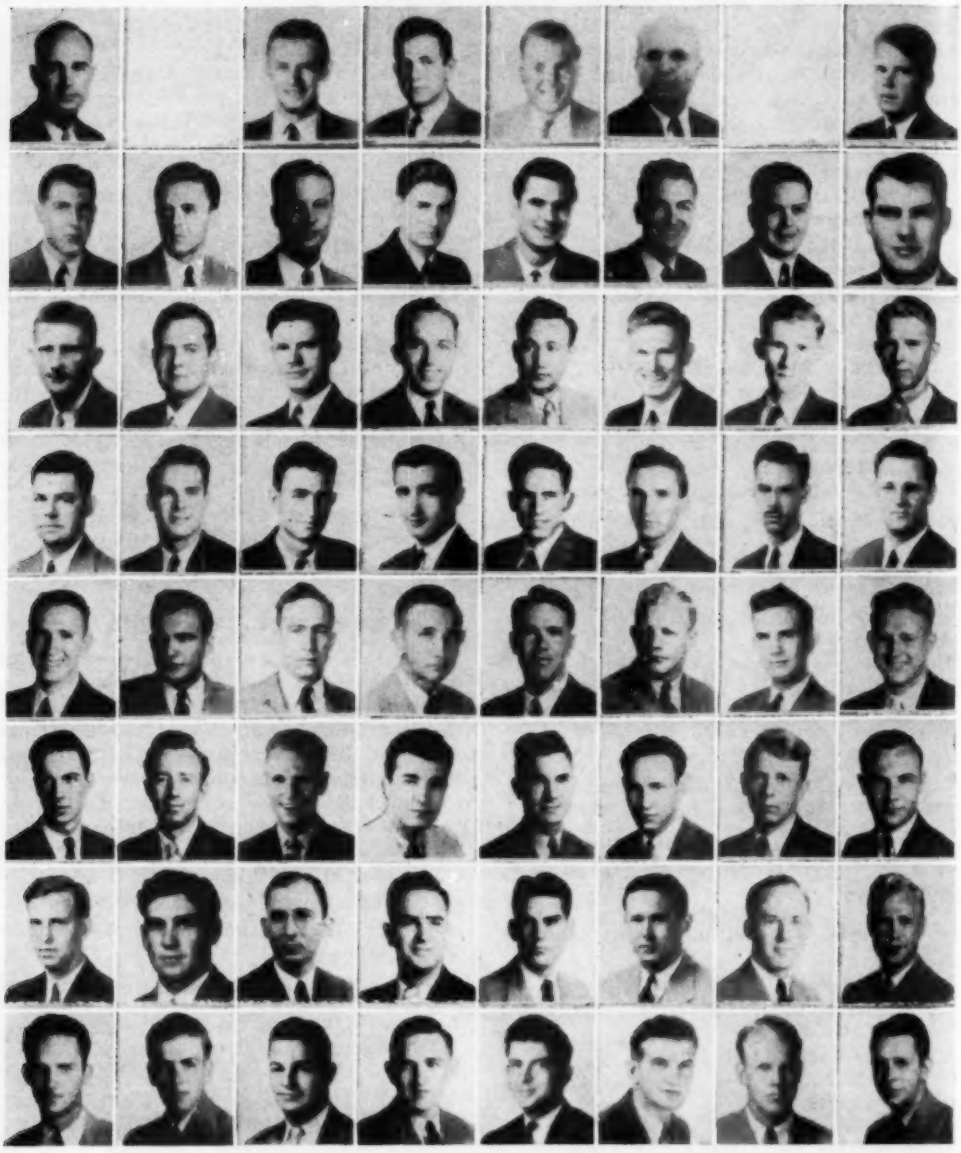
Boyd, Carl Ellis, D.V.M.
202 Capital Apts., Raleigh, N. Car.
Vouchers: F. P. Woolf and E. S. Winters.

Case, Francis H., D.V.M.
Wagner Heights, Savannah, Ga.
Vouchers: F. P. Woolf and E. S. Winters.

ALABAMA POLYTECHNIC INSTITUTE

College of Veterinary Medicine

Class of February, 1943



First Row (top, left to right): Charles E. Adams; Harry H. Morgan, president; Robt. E. Lee, vice-president; Joseph T. Stearns; Prof. Wolfe; and John Anderson.

Second Row (left to right): Robert W. Beaty, Avery L. Blalock, Samuel R. Bowen, Jr., Carl E. Boyd, Thomas C. Bush,† Francis H. Case, James R. Clanton, and Wilburn B. Cochran.

Third Row (left to right): George D. Coffee, Nolen D. Connor, Dudley R. Coppage, Joe B. Crane, Deward B. Croft,* Benjamin W. Dawsey, Gilbert F. Dean, and Arthur B. Douglas.

Fourth Row (left to right): H. Michael Edmiston,* Luther M. Ennis, James M. Fancher, Philip D. Fichandler, Billie U. Flynn, Sam G. Forester, Robert B. Gafford,* and Walter W. Glazener.

Fifth Row (left to right): Hoyt C. Hall, Wilson H. Harrell, Thomas H. Hayes, Warren H. Hicks, Jack H. Howard,† J. Hughes, Leonidas E. Irby, and Willis H. Irvin.

Sixth Row (left to right): William J. Isbell, Jr., Joel H. Jacobs,† Edward M. Jordan, Clinton N. Kaminis, Walter L. Lindsey, Jack London, Marion E. Meadows, Jr., and William L. Moore.

Seventh Row (left to right): Charles L. Nowlin, Clifford W. Pittman,† Coy H. Poitevint, Eugene J. Pope, William W. Putney, Mark A. Quilty, Jr., John T. Riddle, and William E. Spence.

Eighth Row (left to right): Alfred L. Stafford, John P. Thrasher, Jr., Albert U. Turner, William W. Weissinger, George D. Whitney, Josiah McK. Williams, Lester B. Young, and Leonard E. Young.

†Did not graduate. *June graduates.

Thomas C. Bush, Jack H. Howard, Joe H. Jacobs and Clifford W. Pittman did not graduate. Deward B. Croft, H. Michael Edmiston and Robert B. Gafford are June graduates.

CLANTON, J. ROLAND, D.V.M.
Veterinary Hosp., Thomasville, Ga.
Vouchers: F. P. Woolf and E. S. Winters.

COCHRAN, W. B., D.V.M.
Box 222, Pauls Valley, Okla.
Vouchers: F. P. Woolf and E. S. Winters.

COFFEE, GEORGE D., D.V.M.
Boyds, Md.
Vouchers: F. P. Woolf and E. S. Winters.

CONNOR, NOLEN, D., D.V.M.
111 Thomas St., Auburn, Ala.
Vouchers: F. P. Woolf and E. S. Winters.

COPPAGE, DUDLEY ROSS, D.V.M.
Vanceboro, N. Car.
Vouchers: F. P. Woolf and E. S. Winters.

CRANS, JOE BOWER, D.V.M.
Dixie, Ga.
Vouchers: F. P. Woolf and E. S. Winters.

DAWSEY, BENJAMIN, W., D.V.M.
Aynor, S. Car.
Vouchers: F. P. Woolf and E. S. Winters

DEAN, GILBERT F., D.V.M.
Somerville, Ala.
Vouchers: F. P. Woolf and E. S. Winters.

DOUGLAS, A. B., D.V.M.
2519—36 Ave., N., Birmingham, Ala.
Vouchers: F. P. Woolf and E. S. Winters.

ENNIS, LUTHER M., D.V.M.
Salem, Ala.
Vouchers: F. P. Woolf and E. S. Winters.

FANCHER, JAMES M., D.V.M.
Wilton, Ala.
Vouchers: F. P. Woolf and E. S. Winters.

FICHANDLER, PHILIP D., D.V.M.
76 York St., New Haven, Conn.
Vouchers: F. P. Woolf and E. S. Winters.

FLYNN, BILLIE U., D.V.M.
Rt. No. 2, Box 167, Birmingham, Ala.
Vouchers: I. S. McAdory and E. S. Winters.

FORESTER, SAMUEL G., D.V.M.
Manning, S. Car.
Vouchers: I. S. McAdory and E. S. Winters.

GLAZENER, WALTER WARREN, D.V.M.
Brevard, N. Car.
Vouchers: I. S. McAdory and E. S. Winters.

HALL, HOYT, D.V.M.
Pinellas Park, Fla.
Vouchers: I. S. McAdory and E. S. Winters.

HARRELL, WILSON H., D.V.M.
Enterprise, Ala.
Vouchers: I. S. McAdory and E. S. Winters.

HAYES, THOMAS A., D.V.M.
Thorsby, Ala.
Vouchers: I. S. McAdory and E. S. Winters.

HICKS, WARREN H., D.V.M.
1276 P. O. Box, 1019 Western Ave., Rocky Mount, N. Car.
Vouchers: I. S. McAdory and E. S. Winters.

IRBY, L. E., D.V.M.
Eufaula, Ala.
Vouchers: I. S. McAdory and E. S. Winters.

IRVIN, HUGH, D.V.M.
430 W. Cambridge Ave., College Park, Ga.
Vouchers: I. S. McAdory and E. S. Winters.

ISBELL, W. J. JR., D.V.M.
116 E. Battle St., Talladega, Ala.
Vouchers: I. S. McAdory and E. S. Winters.

JORDAN, EDWARD M., D.V.M.
Allen, Ala.
Vouchers: I. S. McAdory and E. S. Winters.

KAMINIS, CLINTON N., D.V.M.
553 Division St., Tarpon Springs, Fla.
Vouchers: I. S. McAdory and E. S. Winters.

LEE, ROBERT E., D.V.M.
Box 25, Marianna, Fla.
Vouchers: I. S. McAdory and E. S. Winters.

LINDSEY, WALTER L., D.V.M.
204 Webster St., Galax, Va.
Vouchers: I. S. McAdory and E. S. Winters.

LONDON, JACK, D.V.M.
Goodwater, Ala.
Vouchers: I. S. McAdory and E. S. Winters.

MEADOWS, MARION E. JR., D.V.M.
R.F.D. No. 1, Phenix City, Ala.
Vouchers: I. S. McAdory and W. E. Cotton.

MOORE, W. L., D.V.M.
Roba, Ala.
Vouchers: I. S. McAdory and E. S. Winters.

MORGAN, HARRY H., D.V.M.
Cunningham, Tenn.
Vouchers: I. S. McAdory and E. S. Winters.

NOWLIN, CHAS. L., D.V.M.
3719 Mobile Highway, Pensacola, Fla.
Vouchers: I. S. McAdory and E. S. Winters.

POITEVINT, C. H., D.V.M.
Dothan, Ala.
Vouchers: I. S. McAdory and E. S. Winters.

POPE, EUGENE J., D.V.M.
Newsome, Va.
Vouchers: I. S. McAdory and E. S. Winters.

PUTNEY, W. W., D.V.M.
Farmville, Va.
Vouchers: I. S. McAdory and E. S. Winters.

QUILTY, MARK A. JR., D.V.M.
823 Common St., Lake Charles, La.
Vouchers: I. S. McAdory and E. S. Winters.

RIDDLE, JOHN T., D.V.M.
R.F.D. No. 2, Piedmont, S. Car.
Vouchers: I. S. McAdory and E. S. Winters.

SPENCE, WILLIAM E., D.V.M.
Rt. No. 4, Dover, Dela.
Vouchers: I. S. McAdory and E. S. Winters.

STAFFORD, ALFRED L., D.V.M.
1st National Bank Bldg., Monticello, Ga.
Vouchers: I. S. McAdory and E. S. Winters.

STEARNS, JOSEPH T., D.V.M.
4009 St. Ives Ct., Louisville, Ky.
Vouchers: I. S. McAdory and E. S. Winters.

THRASHER, JOHN P. JR., D.V.M.
Gen. Del., Baton Rouge, La.
Vouchers: I. S. McAdory and E. S. Winters.

TURNER, ALBERT U., D.V.M.
809—22nd St., Columbus, Ga.
Vouchers: I. S. McAdory and E. S. Winters.

WEISSINGER, W. W., D.V.M.
Eutaw, Ala.
Vouchers: I. S. McAdory and E. S. Winters.

New York State Veterinary College

CORNELL UNIVERSITY

Class of January, 1943

Back Row (left to right)—E. G. Dillman, C. E. Lanfair, W. H. Adolph, H. F. Burghardt, J. S. Proper, B. Fisher, A. C. Arnaboldi, E. E. Ruebush, Jr., H. D. Hopper, D. L. Jenkins, G. K. Kiesel, L. J. Larson and W. J. Matuszczak.

Middle Row (left to right)—E. A. Majilton, W. V. Phillips, F. H. Haner, Jr., D. Woolfe, D. C. McKown, V. J. Tymchyn, H. J. Cleveland, G. D. Halpin, C. L. Ulrich, E. A. Conklin, M. E. Becker, B. Lipman, L. W. Lindsey, and N. F. Lewis.

Front Row (left to right)—J. J. Huckle, G. A. Young, Jr., J. F. Hokanson, N. Paddock, Mrs. A. L. Ross, Prof. H. J. Milks, L. Kotchek, T. Zimmerman, E. O. Gilbert, K. I. Gumaer, and M. S. Brungot.

Whitney, George D., D.V.M.
Oakwood Rd., Orange, Conn.
Vouchers: I. S. McAdory and E. S. Winters.

Williams, J. M., D.V.M.
Moncks Corner, S. Car.
Vouchers: I. S. McAdory and E. S. Winters.

Young, Leonard E., D.V.M.
1304 Pickens St., Columbia, S. Car.
Vouchers: I. S. McAdory and E. S. Winters.

Young, Lester B., D.V.M.
Rt. No. 2, Johnson City, Tenn.
Vouchers: I. S. McAdory and E. S. Winters.

Texas A. & M. College

Lacey, Lee Thomas, D.V.M.
Rt. No. 2, Box 121½, Oakdale, Calif.
Vouchers: A. A. Lenert and W. C. Banks.

Second Listing

Colorado State College

Adami, Robert W., D.V.M., 1202 Fifth St., San Fernando, Calif.
Ausherman, Robert J., D.V.M., Miami, N. Mex.
Beggs, W. E., D.V.M., 204 East Oak, Lamar, Colo.
Bouton, G. N., D.V.M., 9357 E. Colfax, Ave., Aurora, Colo.
Cooper, Emanuel S., D.V.M., 1547½ Wooster St., Los Angeles, Calif.
Costa, Anthony J., D.V.M., Rt. No. 1, Trinidad, Colo.
Epling, Glenwood P., D.V.M., 308 Pitkin St., Fort Collins, Colo.
Foster, William M., D.V.M., Rt. No. 2, Box 673, Modesto, Calif.
Gillispie, J. Marvin, Jr., D.V.M., 1433 W. Mountain Ave., Fort Collins, Colo.
Henry, Jerrold N., D.V.M., 698 Arbor Dr., San Leandro, Calif.
Hittle, Harold E., D.V.M., Box No. 3, Hartman, Colo.
Kiefer, Ural K., D.V.M., 415 W. Myrtle St., Fort Collins, Colo.
Langridge, John Russell, D.V.M., 3791 S. Cherokee, Englewood, Colo.
Lanphear, Paul R., D.V.M., 1221 Remington St., Fort Collins, Colo.
McElyea, Ulysses, D.V.M., Las Cruces, N. Mex.
Marcus, Melvin Jacob, D.V.M., 1162 N. Kingsley Dr., Los Angeles, Calif.
Nicholas, Max M., D.V.M., 340 E. 2nd N., Provo, Utah.
Ramsay, Lawrence G., D.V.M., 217 E. Buffalo, Rawlins, Wyo.
Richards, Robert Booth, D.V.M., 1302 S. Downing St., Denver, Colo.
Riggs, Charles W., D.V.M., 1123 W. Russell Pl., San Antonio, Texas.
Von Tour, Elisha, D.V.M., Colonial Apts. No. 8, Sterling, Colo.
Watson, George R., D.V.M., Box 1285, Estes Park, Colo.
Webb, Jack Howard, D.V.M., 321 W. 13th St., Loveland, Colo.
Westfall, Ralph David, D.V.M., R.F.D., Colusa, Calif.
Zontine, William J., D.V.M., 4438 Clay St., Denver, Colo.

Cornell University*

Adolph, W. H., Jr., D.V.M., 103 Eddy St., Ithaca, N. Y.
Arnaboldi, Allan C., D.V.M., N. Country Rd., Mt. Sinai, L. I., N. Y.
Becker, Milford E., D.V.M., R.F.D. No. 2, Altamont, N. Y.
Brungot, Norman S., D.V.M., Milan Rd., Berlin, N. H.
Burghardt, Harry F., D.V.M., 244-15 54th Ave., Douglaston, L. I., N. Y.
Cleveland, Howard J., D.V.M., 50 Jefferson St., Cattaragus, N. Y.
Conklin, Irwin A., D.V.M., Richville, N. Y.
Dillman, Eugene, D.V.M., 838 Bellmore Ave., Bellmore, L. I., N. Y.
Fisher, Bernard, D.V.M., 201 Williams St., Ithaca, N. Y.
Gilbert, Edwin O., D.V.M., 169 Gregory Ave., West Orange, N. J.
Gumaer, Kenneth I., D.V.M., 32 Woodland Ave., Poughkeepsie, N. Y.
Halpin, George D., D.V.M., Jamesville, N. Y.
Haner, Frank H., Jr., D.V.M., Greene County, Hensonville, N. Y.
Hokanson, John F., D.V.M., Lake St., Pleasantville, N. Y.
Hopper, H. Dean, D.V.M., 128 S. Maple Ave., Ridgewood, N. J.
Huckle, John J., D.V.M., 3 Garden Ave, Ithaca, N. Y.
Jenkins, DuBois L., D.V.M., New Paltz, N. Y.
Kiesel, George K., D.V.M., 18 Highland Terrace, Manhasset, L. I., N. Y.
Kotchek, Leo, D.V.M., 2912 Brighton 7 St., Brooklyn, N. Y.
Langfair, Clyde E., D.V.M., Warrensburg, N. Y.
Larson, Leonard J., D.V.M., 61 W. Sunrise Hwy., Merrick, N. Y.
Lewis, Norman Francis, D.V.M., 34-31 Linden St., Flushing, L. I., N. Y.
Lindsey, Lionel W., D.V.M., Lake Road, Seneca Falls, N. Y.
Lipman, Bernard, D.V.M., 381 Powell St., Brooklyn, N. Y.
McKown, Donald C., D.V.M., Franklin, N. Y.
Majilton, Edward, D.V.M., 52 Day St., Catskill, N. Y.
Matuszczak, Walter J., D.V.M., 705 E. Seneca St., Ithaca, N. Y.
Paddock, Nicholas McKie, D.V.M., Bath, N. Y.
Phillips, Webster V., D.V.M., Amenia, N. Y.
Proper, John S., D.V.M., care W. W. Sheppard, Honeoye Falls, N. Y.
Ross, Andre Lillian, D.V.M., 20 Highland Terrace, Gloversville, N. Y.

Ruebush, E. Edgar, Jr., D.V.M., Ambassador Animal Hosp., 7931 George Ave., Silver Springs, Md.,

Tymchyn, Victor J., D.V.M., R.F.D. No. 2, Altamont, N. Y.

Ulrich, C. L., D.V.M., 208 French St., Buffalo, N. Y.

Woolfe, Daniel T., D.V.M., 706 Neck Rd., Brooklyn, N. Y.

Young, George A., Jr., D.V.M., 302 Mitchell St., Ithaca, N. Y.

Zimmerman, Theodore, D.V.M., 325 W. 63rd St., New York, N. Y.

Texas A. & M. College

Aaron, Edward, D.V.M., 61-38 82nd St., Elmhurst, N. Y.

Aldridge, Wm. G., D.V.M., 1201 N. Throckmorton, Gainesville, Texas.

Belcher, William Alvis, D.V.M., 600 E. Gibbs St., Del Rio, Texas.

Bornstein, Simon, D.V.M., 4344 Avondale, Dallas, Texas.

Cartrite, H. T., D.V.M., Sunray, Texas.

Coffey, Thomas H., D.V.M., Rt. No. 1, Box 97, Compton, Calif.

Crippen, Donald A., D.V.M., 1819 Lyndale Ave., S., Minneapolis, Minn.

Culpepper, Richard A., D.V.M., 1323 W. Ashley St., San Antonio, Texas.

Dickmann, Howard W., D.V.M., Perryville, Mo.

Droleskey, Albert H., D.V.M., 92-39 219th St., Queens Village, L. I., N. Y.

Dwelle, Edward D., D.V.M., 3220 Lovers Lane, Dallas, Texas.

Ewald, P. J., D.V.M., Box 115, Greenwood, La.

Glenn, Dudley M., D.V.M., Box 307, College Station, Texas.

Grimes, Geo. M., D.V.M., Rt. No. 3, Atoka, Tenn.

Grissam, Garner J., D.V.M., care Dr. J. O. Shannon, Midland, Texas.

Grossman, Alex, D.V.M., 1455 Walton Ave., Bronx, N. Y.

Haight, Robert H., D.V.M., Box 454, Balboa Island, Calif.

Hancock, Richard M., D.V.M., Box 68, Acorn Pl., Franklin, Mass.

Hargis, Gifford, D.V.M., Box 157, Colfax, La.

Hauser, William E., D.V.M., 602 E. Locust St., San Antonio, Texas.

Hays, John Cal, D.V.M., Box 388, Graham, Texas.

Hoffer, Samuel Harry, D.V.M., Box 171, College Station, Texas.

Holm, Norman, D.V.M., Bourbon, Ind.

Hull, Joseph S., Jr., D.V.M., 604 Webster Ave., West Plains, Mo.

James, H. P., D.V.M., Omaha, Ill.

James, Philip M., Jr., D.V.M. care of Dr. C. W. Dunn, 721 Hickory St., Abilene, Texas.

Jameson, Henry, D.V.M., Box 613, College Station, Texas.

Janawicz, Alfred E., D.V.M., 4 Baltic Lane, Fitchburg, Mass.

Jones, C. K., D.V.M., Rt. No. 1, Box 290, Corpus Christi, Texas.

Lang, James T., D.V.M., Kurten, Texas.

Lapham, R. F., D.V.M., 1701 Genevieve Ave., San Bernardino, Calif.

Lichnovsky, J. F., D.V.M., Nada, Texas.

McKee, Joe B., D.V.M., Center, Texas.

Macy, Richard D., D.V.M., 1205 S. Lee Ave., El Monte, Calif.

Maier, M. E., Jr., D.V.M., 901 Tenth St., Orange, Texas.

Marcello, Carlo J., D.V.M., R. F. D., Thibadaux, La.

Morgan, Clyde O., Jr., D.V.M., 3104 Milam St., Houston, Texas.

Muller, George H., D.V.M., Rt. No. 1, Box 1086, Menlo Park, Calif.

Mynatt, Vernon S., D.V.M., 4150 Business St., Long Beach, Calif.

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If you have not paid your 1943 dues—remittance should be made at once to prevent interruption of your subscription. The annual dues of $7.00 cover membership and subscription to the monthly AVMA JOURNAL, ***but not*** the quarterly RESEARCH JOURNAL.

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Mailings after this issue will be discontinued to members whose dues remain unpaid at the next mailing date.

If you have already remitted 1943 dues but have not received your membership card, please be patient. Credit has been given to you, but the usual "first-of-the-year" rush may have delayed prompt acknowledgement.

Ommert, Willard David, D.V.M., 464 Hudson St., Oakland, Calif.
Parker, Gerald W., D.V.M., Rt. No. 5, Corsicana, Texas.
Pelot, Harry H., D.V.M., P. O. Box 307, College Station, Texas.
Pickard, A. M., D.V.M., Ladonia, Texas.
Pinkerton, J. T., D.V.M., 1509 Earl St., Tyler, Texas.
Pugatch, Nathan, D.V.M., 517 D St., San Rafael, Calif.
Rea, Ted, D.V.M., Box No. 26, Weatherford, Texas.
Rinehart, James O., D.V.M., R. R. No. 7, Box 317, Springfield, Ill.
Rogers, W. T., D.V.M., 2105-9th St., Lubbock, Texas.
Schwartz, C. L., D.V.M., 811 Liberty St., Alton, Ill.
Schwarzenbach, Howard F., D.V.M., Big Spring, Texas.
Stevens, Earl H., D.V.M., 1144 N. White St., Grand Island, Neb.
Thompson, Charles F., D.V.M., Box 327, Pearsall, Texas.
Tubbs, Charles Russell, D.V.M., 1715 Elmen, Houston, Texas.
Vogelman, Leo, D.V.M., 56 W. 180th St., Bronx, N. Y.
Walker, Wesley W., D.V.M., 1305 Walnut St., Alameda, Calif.
Liggin, Samuel J., D.V.M., Rochelle, La.
Sparkman, Clarence M., D.V.M., Garden City, Texas.

What the Newspapers Say

(Excerpts from Educational Publicity Material issued by the AVMA Public Relations Department.)

Oakland (Calif.) Post-Enquirer
(Jan. 6, 1943)

Meat shortages would be even worse than they are but for the American veterinary physicians, Dr. Charles W. Bower of Topeka, Kan., said in Oakland today.

Dr. Bower, in Oakland to attend the annual convention of the California Veterinary Medical Association last night, was the featured speaker of the session. He credited the veterinarian with protecting meat production "at the source" in every area of the nation.

"If our food-producing regions were now being swept by livestock disease losses as they were during the Civil War, we would lose today's vital struggle for food, instead of winning it," Dr. Bower asserted. "In the summer of 1865, a mere handful of veterinarians gathered together to establish organized methods of controling losses from disease.

"From that start, we now have our nation-wide, coördinate veterinary service. The veterinarians have pledged this nation to guard the health of our food-producing animals, and we shall do it."

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Montgomery (Ala.) Southern Farmer
(Jan. 14, 1943)

A warning to farmers that influenza may make serious attacks on the nation's stepped-up hog production this winter, as it did during the last war, was issued here by the Committee on Swine Diseases of the American Veterinary Medical Association.

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Omaha (Neb.) Stockman
(Feb. 20, 1943)

Risk Involved Here

Among those who are best informed great concern is expressed over an administration plan that would shift the meat inspection division from the Bureau of Animal Industry of the Department of Agriculture, and lodge that important work with the new food distribution division. . . .

The American Veterinary Medical Association has filed a protest with the secretary of agriculture. . . .

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Newspaper Headlines

Simple Precautions Can Eradicate Swine Losses.—*Minneapolis (Kan.) Better Way.*

Veterinarians Study Conservation Methods.—*Birmingham (Ala.) News.*

U. S. Flies Veterinarians to Aid British Cattle.—*Chattanooga (Tenn.) News.*

Meet Outlines Veterinarian War Policies.—*Salt Lake (Utah) Tribune.*

Plea Made to Guard Your Swine From Erysipelas.—*Oklahoma City (Okla.) Livestock News.*

Veterinarians Inspect Food in U. S. Army.—*Lincoln (Neb.) Evening Journal.*

U. S. Veterinarians Shield Servicemen.—*Wichita (Kans.) Morning Eagle.*

Swine Erysipelas Is Not Widespread, But Great Hazard Exists.—*Athens (Tex.) Review.*

Other Newspaper Comment

Des Moines (Ia.) Register
(Jan. 27, 1943)

Tons of meat fit for human consumption was thrown away by Iowa farmers last year because they would not eat the meat nor sell the carcasses of animals accidentally killed on their farms.

E. S. Dickey, retired veterinarian and federal meat inspector, one of the speakers at the fifty-fifth annual Iowa Veterinary Medical Associa-

tion session at Hotel Fort Des Moines, Tuesday, discussed meat salvage informally with those attending the meeting. . . .

If an animal is killed as soon as a broken leg is discovered, or as soon as the veterinarian pronounces the animal incurable the meat will be as good as if the animal were slaughtered for butchering, several agreed.

However, they said the owner should kill and bleed such animals immediately and have the carcass inspected by a veterinarian if there is the least doubt as to whether it is fit to eat. . . .

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Malta (Mont.) News
(Jan. 28, 1943)

Montana dairymen can help prevent bovine coccodiosis and save many calves by practicing segregation and cleanliness, according to Dr. Howard Welch of the Montana Veterinary Research Laboratory at Montana State College.

Bovine coccidiosis, or red diarrhea, is an infectious intestinal disease of dairy cattle causing severely infected animals to be weak, eat poorly, and become thin. Many infected animals die. Coccidiosis symptoms, especially the various evidences of diarrhea, are commonly mistaken by dairymen for those of white scours, a bacterial malady of early calfhood. . . .

U. S. GOVERNMENT

Test Anti-Freeze Solutions for Harmfulness

Many motors have been damaged, some of them beyond repair, by harmful salty or oily anti-freeze mixtures in radiators. Although manufacture of such solutions is now prohibited, consumers are warned that some brands are still in circulation.

Simple tests have been devised by the U. S. Bureau of Standards at the request of the Office of Defense Transportation to help truck and automobile owners determine whether the anti-freeze solutions in their vehicles are safe. Any owner who is not sure what kind of anti-freeze solution is in the radiator of his car or truck should make these tests at once, the ODT declared in a recent announcement. If the tests show the presence of either salt or distilled oils, radiators should be drained, flushed and refilled with reliable anti-freeze solutions.

Safe anti-freeze mixtures are permanent solutions containing ethylene glycol and the more common semi-permanent types containing methyl or ethyl alcohol. Motorists and truck operators are advised to use only products plainly marked as having alcohol bases.

Unless car and truck operators are sure they are using safe mixtures, they should make the following two tests in the order given.

For distilled oils: Draw a small amount of mixture from the radiator and add to a glass of water. If the radiator mixture floats noticeably on the water, the anti-freeze contains injurious kerosene, fuel oil or naptha.

For harmful salt solutions: Drain a cupful of radiator mixture into a clean tin can and boil until all liquid has evaporated. If a substantial white or crystalline coating remains, the solution contains salt.

The fact that many motorists leave anti-freeze mixtures in their cars during the summer makes it doubly important that only a safe anti-freeze be used, ODT officials pointed out.

Physical Therapy Equipment Restricted

Order L-259 issued by the War Production Board on Feb. 16, 1943, prohibits the manufacture of all types of physical therapy equipment except surgical diathermy units, electric bakers, fever cabinets and certain other items of a similar nature. While the items specifically mentioned are not placed under production limitations, their sale or delivery is subject to control, and permissible only on purchase orders for the armed services, lend-lease, Board of Economic Warfare, hospitals, or for medical departments of industrial concerns.

Items which cannot be manufactured hereafter may be distributed without restriction until present stocks are exhausted and include vibrators, sun lamps and other heat applicators.

Combatant Casualties of the War*

Announced casualties of the United States armed forces total 65,380, the Office of War Information reported today.

This total includes killed, wounded, missing and interned in neutral countries, and army prisoners of war.

The War Department reported that through February 7, the Army's casualties totaled 41,948. Of this number 3,533 were killed; 6,509 were wounded. There were 25,684 missing, 6,132 are prisoners of war, and 90 are interned in neutral countries. Of the wounded, 743 have returned to active duty. The casualty total of 41,948 includes 12,500 Philippine Scouts, of whom 469 were killed and 747 wounded. The remainder are assumed to be prisoners of war.

The Navy Department reported casualties, whose next of kin have been notified by February 19, totaling 23,432. These are as follows:

Navy: dead, 5,083; wounded, 2,087; missing, 10,197; total 17,367.

*Received from the Office of War Information Feb. 25, 1943.

Marine Corps: dead, 1,483; wounded, 2,344; missing, 1,994; total 5,821.

Coast Guard: dead, 51; wounded, 19; missing, 174; total 244.

Combined totals (Navy, Marine Corps and Coast Guard): dead, 6,617; wounded, 4,450; missing, 12,365; total 23,432.

Combined casualty total for all of the armed forces: dead, 10,150; wounded, 10,959; missing, 44,181; overall total, 65,380.

The army list is complete through February 7, the latest date for which totals are available. The navy list is up to February 19, but includes only casualties whose next of kin have received notification.

AMONG THE STATES

Canada

Civil service examinations for positions of junior veterinary inspector were held in various cities from coast to coast, March 13, 1943. According to the announcement, these positions are open to British subjects who have resided in Canada for at least five years. Anatomy, pathology, contagious diseases, and meat inspection are the branches covered. The opening salary is $1,800 a year plus a "cost of living" bonus now fixed at $18.42 a month. A maximum of $2,160 a year may be reached on recommendation for meritorious service. For veterinary inspector, the initial salary is $1,920 a year: maximum, $2,520. Successful candidates are also eligible for part time employment at $10.00 a day, when needed.

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Manitoba Veterinary Medical Association.—The fifty-third annual meeting of the Manitoba Veterinary Medical Association was held March 12, 1943 at the Marlborough Hotel, Winnipeg, with 75 in attendance. A motion passed at the business meeting indicated that the Manitoba members would be willing to join a national organization, should such a body be formed.

M. T. Lewis, veterinarian and member of the provincial legislature, spoke on "Provincial and Municipal Veterinary Services in Manitoba." Other speakers and their subjects were:

H. N. Thompson, Virden: "Wastage in the Livestock Industry."

T. J. E. Rutledge, Swan River: "Common Diseases in Hogs."

R. H. Lay, district veterinary inspector, Health of Animals Division, Manitoba, directed a panel discussion by a group of veterinarians and agriculturalists on a variety of subjects with emphasis on public health and preventive veterinary medicine.

A. Savage spoke on mastitis.

C. L. Campbell, Lederle Laboratories, Inc., Pearl River, N. Y.: "The Vaccination of Poultry for Fowl-Pox and Laryngeotrachitis". Illustrated.

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Ontario Veterinary Medical Association.—The sixty-ninth annual conference of the Ontario Veterinary Association was held at the Royal York Hotel, Jan. 28-29, 1943.

An outstanding program had been arranged, with a banquet and dance on the evening of the twenty-eighth, in the roof garden. Approximately 170 members and guests were present. The following were special guest speakers:

The Hon. P. M. Dewan, Minister of Agriculture for the Province of Ontario.

A. E. Cameron, Veterinary Director General, Ottawa.

Otto Stader, Ardmore, Pa.

The Association was fortunate in having Dr. Stader present papers on "The Use of the Stader Reduction Splint in the Treatment of Fractures in Canines and Man," and "The Use of Distemperoid Virus as a Prophylactic Agent in Canine Practice."

Dr. Stader was remarkable in his address on the Stader splint, which was demonstrated by moving pictures. Several prominent physicians and surgeons of the medical profession were present.

The meeting was carried out in a capable manner. Capt. H. J. Davis, Aylmer, Ontario, was elected president.

s/W. Moynihan, *Secretary.*

Illinois

State Association.—The sixty-first annual meeting of the Illinois State Veterinary Medical Association was held in Springfield, Jan. 21-22, 1943. Subjects of a military nature and those diseases particularly concerned in food production constituted the larger part of the program. The following speakers and subjects were presented:

C. E. Fidler, chief veterinarian, Springfield, and **A. K. Kuttler,** inspector-in-charge, United States BAI, Springfield: "Brucellosis and Its Control."

W. C. Glenney, Elgin: "A Moderate Mixed Practice." A film.

W. A. Young, managing director, The Anti-Cruelty Society, Chicago: "Dogs for Defense."

A. C. Merrick, Brookfield: "Summer Eczema of Dogs."

C. S. Bryan, Michigan State College, East Lansing: "The Udder-Infusion Treatment in the Herd Program of the Control of Bovine Mastitis."

J. E. Hunter, director of research, Allied Mills, Inc., Peoria: "Wartime Problems in Poultry and Animal Nutrition."

C. D. Lee, Iowa State College, Ames: "Poultry Practice."

J. P. Torrey, Corn Belt Laboratories, East St. Louis: "Parasites as Vectors of Disease."

J. G. Hardenbergh, executive secretary, A.V.M.A., Chicago: "The Veterinarian in Wartime."

J. E. Peterman, in charge of swine erysipelas field investigations, United States BAI, Lincoln, Neb.: "Swine Erysipelas."

The officers elected were: A. E. Bott, East St. Louis, *president;* L. A. Gray, Bushnell, *vice-president;* A. K. Merriman, Sullivan, member of the executive board, and C. C. Hastings, Williamsville, *secretary-treasurer.*

s/C. C. HASTINGS, *Secretary.*

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At the meeting of the Illinois State Veterinary Medical Association held in Springfield, Jan. 21-22, 1943, the women present organized an auxiliary, electing the following officers: Mrs. A. E. Bott, East St. Louis, *president;* Mrs. C. E. Dille, Cairo, *vice-president;* Mrs. C. W. Lantis, Quincy, *treasurer;* and Mrs. C. C. Hastings, Williamsville, *secretary.* It is hoped to get this organization functioning before the next meeting. A limited publicity campaign will be carried on to increase the membership and get all the women interested.

s/MRS. C. C. HASTINGS, *Secretary.*

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Important Transaction.—The gift of the 175-year-old *Encyclopedia Britannica* to the University of Chicago by Sears, Roebuck & Company rates among the monumental donations to the field of education. These famous tomes were first printed in Edinburgh, Scotland in 1768. Subsidiary companies in England, Canada, and South Africa are included in the gift.

Kansas

On the sole basis of its weight and the high price of beef on the hoof, a steer brought $277.50 on the Kansas City market in January. The animal weighed 1,850 lbs. and the price paid was 15 cents. He was a Brahman-Shorthorn-Hereford cross, fed-out at Hamilton. Age 5 years.

Louisiana

Annual Conference.—The twelfth annual conference for the Louisiana Veterinary Medical Association was held Feb. 10-11, 1943 at the Louisiana State University and A & M College, Baton Rouge. The following program was presented:

E. R. Frank, Kansas State College, Manhattan: "Bovine Surgery." (Motion picture.)

D. M. Seath, Louisiana Agricultural Experiment Station: "Dairy Pastures for Louisiana." (Illustrated.)

H. C. Smith, Oklahoma A. & M. College, Stillwater: "Chemotherapy of 275 cases of Anaplasmosis". (Illustrated.)

R. Jensen, Louisiana State University: "A Preliminary Report on Eperythrozoönosis, A Complication of Anaplasmosis."

Major Andy Crawford, New Orleans: "The Veterianarian and the United States Army."

C. A. Brown, botany department, Louisiana State University: "Poisonous Plants of Louisiana."

Movies were used for depicting the details of technique in equine surgery, lameness in the horse, anesthesia in large animals, and surgery in small animals. Dr. E. R. Frank was the commentator.

s/A. H. GROTH, *Secretary.*

Massachusetts

State Association.—The regular meeting of the Massachusetts Veterinary Medical Association was held Feb. 24, 1943, at the Hotel Vendome, Boston. The attendance was above average. The speakers were:

T. O. Munson, Angell Memorial Hospital, Boston: "Wartime Feeding of Pet Animals." The subject was timely and Dr. Munson's presentation brought forth an instructive discussion.

Robert O. Biltz, E. R. Squibb and Sons, presented a film on "The Control and Treatment of Bovine Mastitis."

s/H. W. JAKEMAN, *Secretary.*

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Dr. T. O. Munson of Angell Memorial Hospital of Boston told the members of the local SPCA auxiliary at their monthly meeting that protein is the most important part of the diet of dogs, as well as of human beings. Dr. Munson, speaking on the subject of nutrition, advised supplementing the dry dog foods with available animal proteins, such as milk, eggs, brains, heart and liver. He also recommended horse meat as an excellent substitute for beef and lamb.

Michigan

Chicory, so-called coffee stretcher, is produced mainly in this state, although most of it has been used in the South blended with coffee. Chicory is the roasted root of *Chicorium intybus,* native perennial of Asia and America.

Missouri

A Missouri Veterinary School.—An editorial in one of the widely circulated "Corn Belt Farm Dailies," the *Kansas City Daily Drovers Telegram* (March 3), announces that a course in veterinary science leading to the degree of veterinary medicine has been recommended

by the "Governor's board of visitors," after revealing the "distressing fact that 263 qualified as practicing veterinarians" in the state, and that there are 27 out of the state's 114 counties in which there are none residing. A five-year course which would enable students of the university to become veterinarians in their home state has been recommended.

Montana

Livestock Sanitary Board. — The livestock sanitary conditions of the state as of Dec. 1, 1942, announced in the report of Secretary and Executive Officer W. J. Butler to Governor Ford, indicates that diseases of farm animals are well in hand and the livestock industry prosperous. But, stresses the report, this does not mean that diseases in epizoötic form would not have occurred but for "long hours of painstaking investigations and the application of prompt curative and quarantine measures. No disease can be eradicated unless careful follow-up work is performed." In fact, the discussion seriatim of the most serious maladies of horses, cattle, sheep, and hogs, gazettes a remarkably low incidence for the year. There were no cases of glanders, dourine, mange, or periodic ophthalmia in horses reported during the year; tuberculosis of cattle was kept far within the "modified" rate (0.074%), and there has been no rabies in the state since 1925. The occurence of equine encephalitis, red-water of cattle, hog cholera and erysipelas, are negligible and the reactions test for brucellosis showed an incidence of 3.49 per cent out of 54,789 head tested. Veterinary Inspector G. W. Cronen of the United States Bureau of Animal Industry is complimented for his coöperation with the state's animal-disease fighters.

Nebraska

State Association.—The forty-fourth annual meeting of the Nebraska State Veterinary Medical Association was held Feb. 4-5, 1943 at the Hotel Cornhusker, Lincoln. The officers were all reëlected for the coming year: D. C. Scott, Tekamah, *president;* N. L. Ditman, Winside, *vice-president;* John D. Sprague, David City, *secretary-treasurer.* The speakers and their subjects were:

C. D. Lee, Veterinary Research Institute, Ames., Ia.: "Poultry Diseases." (Film and lecture.)

R. R. Dykstra, Kansas State College, Manhattan: "Brucellosis and Vaccination."

L. E. Hanson, University of Nebraska: "Nutritional Problems."

Frank Breed, Norden Laboratories, Lincoln: "Red Water in Cattle."

J. E. Weinman, Lincoln: "Canine Practice."

E. R. Frank, Kansas State College: "Bovine Surgery." (Film and lecture.)

J. D. Ray, Corn States Serum Co.: "Swine Diseases."

J. W. Murdoch, inspector in charge, U. S. BAI, reported on the work of the federal bureau.

J. R. Snyder, chief of the Nebraska BAI, reported on the work of the state bureau.

A. H. Quin, Jensen-Salsbery Laboratories, conducted a question box.

Dr. L. Van Es was honored at the banquet and program on February 4 for his fifty years of service in the veterinary profession and to the livestock industry.

S/BERNHARD WITT, *Secretary.*

Nevada

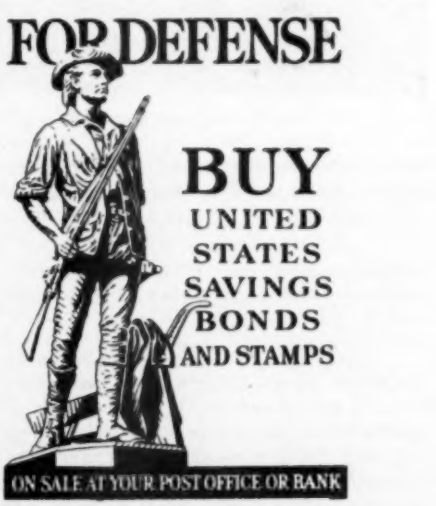
State Association.—The Nevada State Veterinary Medical Association meeting was held Jan. 29, 1943. On account of wartime conditions, the usual program and banquet were dispensed with. At the business meeting the officers elected were: W. R. Smith, Las Vegas, *president;* H. A. Reagor, Reno, *vice-president;* Warren B. Earl, Reno, *secretary-treasurer.*

New York

State Association.—The regular meeting of the Veterinary Medical Association of New York City was held March 3, 1943, in the Hotel New Yorker. The following speakers and their subjects were presented:

William A. Hagan, College of Veterinary Medicine, Cornell University, Ithaca: "Viruses and Virus Diseases of Animals."

Jacob Lebish, New York City: "Plastic Re-



pair for Extensive Ulceration of the Elbow in a Dog."

C. E. DeCamp, Scarsdale: "Throat Culture Findings in Small Animals with Interpretations (77 cases)."

s/C. R. SCHROEDER, *Secretary.*

Texas

Geologists of Harvard unearthed a giant amphibian in the Texas red beds noted for their revelations on the Reptilian Age. The specimen, described in the *Journal of Geology* (Nov.-Dec., 1942) as the ancestor of all frogs, has a head a foot and a half wide and two feet long. It flourished, hereabout, some 250 million years ago, or quite some time before Mark Francis started to collect the remains of the prehistoric fauna that preceded the coming of the Longhorns.

• • •

Brahman Cattle.—The average Corn Belt farmer, finding a big-eared, humpbacked Brahman in a carload of feeder steers, would be quite as startled as if he'd encountered Mahatma Gandhi shivering in his loin cloth on the sidewalks of the county seat. But, Gulf Coast

—The Texas Cattleman

Lady Aristocrat Manso 1st, Grand Champion at Houston, three times, typifies the beefy Brahmans of Texas.

cattlemen who live with and by that breed, would be downright shocked.—*The Texas Cattleman.*

• • •

Bovine piroplasmosis got the name Texas fever from the trail of that disease left in summertime when Texas cattle were driven overland to the stock-raising sections of the West. The disease was prevalent in South Carolina during the colonial days. The good health of the cattle driven north and their deadly effect on northern cattle was a hard puzzle to solve.

Wisconsin

The center figure in the picture, herewith, the person holding the plasma bottle, is Cor-

—U. S. Signal Corps Photo.

poral Clarence Jaschinski, of Sheboygan, in northern Padua. He is assisting Capt. Arnold Neustader, of Flushing, N. Y. (right) in giving a blood transfusion to a badly wounded soldier. The Red Cross is requesting four million pints of blood for 1943.

State Board Examinations

West Virginia—The West Virginia Veterinary Board will convene at the Daniel Boone Hotel in Charleston, Kanawha County, West Va., Apr. 5, 1943, at 9 a. m., for the purpose of holding examinations in veterinary medicine. All applications must be in the hands of the Secretary not later than March 15. For further particulars, address: W. E. Trussell, Secretary, Charles Town, Jefferson County, West Va.

New Jersey—The New Jersey State Board of Veterinary Medical Examiners will hold their next examination at the State House, Trenton, N. J., Apr. 9-10, 1943, at 9 a. m. Applications should be filed with the secretary, J. A. S. Millar, P. O. Box 318, Deal, N. J., at least ten days prior to date of examination.

Massachusetts—The Massachusetts State Board of Veterinary Examiners will hold examinations for registration in veterinary medicine May 18-19, 1943 at the State House, Boston, Mass.

COMING MEETINGS

Maine Veterinary Medical Association. Meeting at Dr. Alton Richardson's Hospital, Waterville, Apr. 14, 1943. J. F. Witter, Orono, Maine, secretary-treasurer.

Connecticut Veterinary Medical Association. Bond Hotel, Hartford, Conn., May 5, 1943. Geo. E. Corwin, 19 Frederick St., Hartford, Conn., secretary-treasurer.

District of Columbia Veterinary Medical Association. Meeting on May 11, 1943, Mayflower Hotel, Washington, D. C. W. M. Mohler, 5508 Nebraska Ave., N.W., Washington, D. C., secretary.

Michigan State Veterinary Medical Association. Michigan State College, East Lansing, June 23-24, 1943. B. J. Killham, Department of Animal Pathology, M.S.C., East Lansing, Mich., secretary.

Eastern Iowa Veterinary Medical Association. Hotel Montrose, Cedar Rapids. Oct. 12-13, 1943. R. E. Elson, Vinton, secretary.

American Public Health Association (1790 Broadway, New York City). Wartime Public Health Conference, New York City, Oct. 12-14, 1943. Seventy-second annual business meeting of the Association will be held in connection.

Meetings Postponed or Cancelled

Houston Veterinary Medical Association Archie Stallings, 801 Waugh Drive, Houston, Texas, secretary. Meetings for the Houston Association have been postponed for the duration.

South Dakota Veterinary Medical Association. J. T. McGilvray, R. R. No. 3, Sioux Falls, S. Dak., secretary-treasurer. Meetings for the South Dakota Association have been postponed for the duration.

Virginia State Veterinary Medical Association. E. P. Johnson, Box 593, Blacksburg, Va., secretary. Winter meeting cancelled.

Wisconsin Veterinary Medical Association. B. A. Beach, University of Wisconsin, Madison, Wis., secretary. Annual (winter) meeting cancelled.

Mississippi Veterinary Medical Association. H. C. Simmons, secretary-treasurer. The 1943 meeting has been postponed indefinitely.

DEATHS

E. L. Balwin (N.Y.-A.V.C., '07), 72 years old, Newark, N. J., died Dec. 24, 1942. He was a member of the New Jersey Veterinary Medical Association.

H. K. Berry (O.V.C., '02), 58 years old, Glen Rock, N. J., died Jan. 24, 1943. He had been associated with the New Jersey Bureau of Animal Industry since 1918. He was a member of the New Jersey Veterinary Medical Association.

Anthony M. Burdo (K.S.C., '39), 25 years old, Brooklyn, N. Y., died Mar. 2, 1943. He joined the AVMA in 1939.

Edward Curran (McK., '10), 70 years old, died at Alhambra, Calif., Mar. 6, 1943. A veterinarian, Dr. Curran was also an inventor and spent much of the past fifty years inventing mechanical devices. He was one of the perfecters of the altimeter, an instrument that registers an airplane's altitude.

George J. Goubeaud (Amer., '91), 73 years old, died at New York City, Feb. 12, 1943.

Frank A. Ingram (Ont., '92), 82 years old, West Hartford, Conn., died Jan. 28, 1943. Dr. Ingram served in the Bureau of Animal Industry in Wyoming and was an inspector in packing houses in Chicago. He was deputy commissioner of Domestic Animals for Connecticut for three terms and was vice-president of the United States Sanitary Association in 1917.

John D. Jones (C.V.C., '10), 69 years old, died at Providence, R. I., Mar. 10, 1943. Dr. Jones located in Providence following graduation. During World War I, he served with the 26th Division, resuming his practice in Providence after the war. He joined the AVMA in 1938.

Raymon M. Staley (U.P., '06), died at his home in Narberth, Pa., Mar. 5, 1943. He joined the AVMA in 1911.

Benjamin F. Swingley (Ont., '82), 86 years old, died at Freeport, Ill. Dr. Swingley established a practice in Freeport upon graduation. He served as state veterinarian for 23 years and at one time aided in controlling an epidemic of glanders in Chicago.

David Crozier Tennent (Ont. '06), 60 years old, died at Toronto, Can., Feb. 4, 1943. He entered the service of the Health of Animals Branch in 1906 and at the time of his death was assistant chief veterinary inspector in the Toronto office of the Division. He was a son of J. H. Tennent, a well known Western Ontario veterinarian. He joined the AVMA in 1941.

Edison Bidwell Ungar (Ont., '19), 63 years old, died at Moncton, New Brunswick, Feb. 2, 1943. Dr. Ungar served overseas for three years in World War I. At the time of his death, he was in charge of the work of the Health of Animals Division in the Maritime Provinces.

John W. Ward (S.W.V.C., '16), 58 years old, died at Barker, Texas, Feb. 3, 1943. Dr. Ward practiced at Jacksonville until 1927, then moved to Houston, where he continued in practice until his death. At the time of his death, he was the veterinary member of the Eighth Corps, Procurement and Assignment Committee of the WMC. He was a member of the veterinary medical associations of Texas and of Houston. He joined the AVMA in 1929.

THE VETERINARY PROFESSION AND THE WAR

Procedure for Holders of Medical Administrative Corps Commissions in Applying for Commissions in the Army Veterinary Corps

Individuals who hold commissions in the Medical Administrative Corps may make application, *after graduation and receipt of the degree of Doctor of Veterinary Medicine*, for commissions as First Lieutenants, Veterinary Corps, Army of the United States, according to recent information from the Surgeon General's Office. The following forms are used in connection with such applications:

Personnel Placement Questionnaire (Form 0850) and duplicate thereof (Form 0850a);

Classification Questionnaire of Medical Department Reserve Officers (Form 178-2);

Report of Physical Examination (W.D., A.G.O. Form 63).

A final-type physical examination should be taken at the nearest Army Post and the report of same entered on Form 63. Space 3 of this form should state "Application for Veterinary Corps, AUS." Completed Form 63 should accompany the application. Two prints of a recent photograph (passport size) must also accompany each application.

The applicant should submit with his application a request that he be separated from his commission in the Medical Administrative Corps and given a vacation appointment in the Veterinary Corps, Army of the United States. As the application must show that the applicant has received the degree of Doctor of Veterinary Medicine, the papers should not be sent in prior to actual graduation.

Completed applications should be submitted for verification to the dean of the college prior to being forwarded to the Surgeon General of the Army, Services of Supply, War Department, Washington, D. C.

As indicated in the January (1943) JOURNAL, page 81, appointments to meet the anticipated requirements for the entire year of 1943 will not be made as fast as applications are received. The commissioning of additional veterinarians required will be spread over the year and only in such numbers as are required for active duty. Thus, as applications are received, only such numbers will be commissioned as are required for current needs and those of the immediate future. The filing, therefore, of an application is not to be taken as an assurance that a commission will be granted, and applicants should not plan their private affairs for entry into the military service until notified that they have been selected for a Veterinary Corps commission.

In making selections, equal consideration will be given recent graduates holding Medical Administrative Corps commissions, those qualified individuals who fail to receive deferment under the Selective Service Act and who are inducted into the military service as privates, and others meeting the requirements as to age, citizenship, physical condition, basic and professional training, adaptability for military service, etc.

New Occupational Bulletin on Student Deferment

The Selective Service System has issued a new occupational bulletin covering the eligibility for deferment of students in scientific and specialized fields and in certain professions.

Sections 1, 3 and 5 of the bulletin, reproduced below, relate particularly to students in medicine, veterinary medicine and dentistry.

National Headquarters
SELECTIVE SERVICE SYSTEM
21st & C St., N. W.
Washington, D. C.

March 1, 1943.

Occupational Bulletin No. 11 (Amended March 1, 1943). Effective immediately.

Subject: Student Deferment.

1. GENERAL POLICY ON STUDENT DEFERMENT

The War Manpower Commission has certified that there exists a serious need for additional persons in scientific and specialized fields and in certain of the professions. They are needed to perform vital services in activities essential to war production, to the support of the war effort, and in activities, the maintenance of

which is necessary to the health, safety, and welfare of the nation.

The subject of this occupational bulletin covers the eligibility of certain students for deferment. Careful consideration for occupational deferment should be given students included herein.

2. STUDENTS, REGULAR COURSES, SCIENTIFIC AND SPECIALIZED FIELDS

(a) *Undergraduate students.*—A student in undergraduate work in any of the scientific and specialized fields listed in paragraph (c) below should be considered for occupational classification if he is a full-time student in good standing in a recognized college or university and if it is certified by the institution as follows:

(1) That he is competent and gives promise of successful completion of such course of study, and

(2) That if he continues his progress he will graduate from such course of study on or before July 1, 1943.

(b) *Graduate students.*—A graduate or postgraduate student undertaking further studies in the scientific and specialized fields, listed in paragraph (c) below, following completion of his normal under-graduate course of study should be considered for occupational classification if in addition to pursuing further studies, he is also acting as a graduate assistant in a recognized college or university. A graduate assistant should be a student who, in addition to pursuing such further studies, is engaged in one of the following:

(1) In scientific research certified by a recognized federal agency as related to the war effort; or

(2) In classroom or laboratory instruction in one of these scientific or specialized fields for not less than twelve hours per week.

(c) *Scientific and Specialized fields.*—Aeronautical engineers, automotive engineers, bacteriologists, chemical engineers, chemists, civil engineers, electric engineers, geophysicists, and heating, ventilating, refrigerating, and air conditioning engineers. Marine engineers, mathematicians, mechanical engineers, meteorologists, and mining and metallurgical engineers, including mineral technologists. Naval architects, petroleum engineers, physicists (including astronomers), radio engineers, safety engineers, sanitary engineers, and transportation engineers—air, highway, railroad, water.

3. STUDENTS, MEDICAL, DENTAL, VETERINARY, OSTEOPATHIC, THEOLOGICAL

(a) *Undergraduate, preprofessional students.*—A student in premedical, predental, preveterinary, preosteopathic, and pretheological fields should be considered for occupational classification if he is a full-time student in good standing in a recognized college or university, and if:

(1) It is certified by the institution in which he is pursuing the preprofessional course of study that if he continues his progress he will complete such preprofessional course of study on or before July 1, 1945, and

(2) It is certified by a recognized medical, dental, veterinary, osteopathic, or theological college that he is unqualifiedly accepted for admission and will undertake professional studies upon completion of his preprofessional work.

(b) *Students in professional schools.*—A registrant who is in training and preparation as a medical, dental, veterinary, or osteopathic student in a recognized medical school, dental school, school of veterinary medicine, or school of osteopathy (a student preparing for the ministry in a theological or divinity school recognized as such a school prior to September 16, 1939, is exempt from training and service under the provisions of the Selective Training and Service Act of 1940), should be considered for occupational classification during the period of such professional course, provided he is a full-time student in good standing, and if:

(1) He continues to maintain good standing in such course of study, and

(2) It is certified by the institution that he is competent and gives promise of the successful completion of such course of study and acquiring the necessary degree of training, qualification, or skill to become a recognized medical doctor, dentist, doctor of veterinary medicine, or osteopath.

(c) *Internes.*—A registrant who has completed his professional training and preparation as a medical doctor, dentist, or osteopath, and who is undertaking further studies in a hospital or institution, giving a recognized internship, should be considered for occupational classification so long as he continues such interneship, but for a period not to exceed one complete year.

4. STUDENTS OF AGRICULTURE, FORESTRY, PHARMACY, AND OPTOMETRY

(a) *Undergraduate students.*—A student in undergraduate work in agriculture, forestry, pharmacy, or optometry should be considered for occupational classification if he is a full-time student in good standing in a recognized college or university and if it is certified by the institution as follows:

(1) That he is competent and gives promise of the successful completion of such course of study, and

(2) That if he has completed at least one-half of his undergraduate work and that if he continues his progress he will graduate in a number of months equal to the period of academic study which he has already completed.

Such deferment of students of agriculture, forestry, pharmacy, or optometry should not be for a period beyond July 1, 1943, pending further consideration of the status of such students.

5. OPPORTUNITY TO ENGAGE IN PROFESSION

When a registrant has completed his training and preparation in a recognized college or university, or his interneship, and has acquired a high degree of training, qualification, or skill, such registrant should then be given the opportunity to become engaged in the practice of his profession in the armed forces, or in an essential civilian activity. In many instances following graduation from a recognized college or university, or the completion of an interneship, a certain period of time will be required in the placing of such persons in an essential activity. When a registrant has been deferred as a necessary man in order to complete his training and preparation, it is only logical that his deferment should continue until he has had an opportunity to put his professional training and skill to use in the best interest of the nation. Accordingly, following graduation in any of these professional fields or following an interneship, a registrant should be considered for further occupational classification for a period of not to exceed sixty days, in order that he may have an opportunity to engage in a critical occupation of his profession in the armed forces or in an essential civilian activity, provided that during such period the registrant is making an honest and diligent effort to become so engaged.

LEWIS B. HERSHEY
Director

Physician Writes an Oath

Back in the year 3544* P.A. (post-Adam), a Greek army surgeon named Hippocrates, of the Peloponnesian War and private physician of Cos, wrote an Oath. It was, obviously, intended to shape the conduct of the young graduates. What with the quacks and the fakirs and the half-doctors of his decadent country, things were pretty bad. (The Greeks were just beginning to philosophize themselves into the yoke of the Caesars.) The date was about four centuries before our own year 1 *anno Domini*, corresponding quite well to the time of almost complete breakdown of the sound medical doctrines of the more ancient people. It must be admitted forthwith that the Oath was a good essay on professional behavior. But, to the nonpanegyrizing medical historian, the Oath is also a confession that something of the sort was needed to make physicians behave. It was a supernaturally viable piece of written material for it lay dormant and unused 'til the coming of Padua eighteen hundred years later—when physicians began to wear high hats and long coats and surgery had gone to the barbers.

Though this A.D. 1943, or 2,343 years later or so after the physician of Cos took *plume* in hand to put his notion on record, the folks of the street still know nothing of its planks and medicine goes on fighting the same old battle with quite a few deserters to contend with. Quackery lives on with fangs even sharper than ever, *voyez donc*, the radio commentators.

Anyhow, Hippocrates was no friend of ours, nor was he as much of a benefactor as the medical profession believes. He was narrow-minded as was proved when he "ditched" veterinary medicine because the allegedly towering mind of friend Plato (q.v.) philosophized (obviously with close-knit brow) that domestic animals, having no soul, were not entitled to the ministrations of the big shots. So, down went Greece another notch. It was a case of a babbling philosopher and a one-track doctor who saw little of the great wide world beyond the ethics of their vocations, and who did not shape the conduct of their own generation. Big words and wise sayings are impotent things where the fauna and flora of the earth are overlooked, and that's what we are trying to say to the good folks of the U.S.A. as they fight for survival.

Moreover, the medical and veterinary associations have written and obey better codes than Hippocrates ever dreamed of.

The AVMA is a group of qualified selectees, battling for the preservation of a fundamental need—food. Haven't you some fine colleague who should be drafted? At no time in American history was a strong front in the ranks of the veterinary profession more needed than now. When the smoke of the war has vanished, the nation sitting on top will be the one that has conserved its livestock industry by the wise handling of its veterinary service.

*Date based on Sacred history.

HOW MANY WILL BE MISSING DUE TO *Swine Erysipelas?*

To quote Secretary of Agriculture Claude R. Wickard: "If we were to apply known methods of prevention and control of all livestock diseases as conscientiously as we have done in combatting some, we could .... increase the total output of products with little increase in the numbers of breeding stock." (1942 Yearbook of Agriculture, U. S. Dept. of Agriculture).

• • • • •

One disease requiring far better control, and for which suitable control measures are at hand, is Swine Erysipelas. Simultaneous immunization with a viable vaccine and a potent serum produces satisfactory immunity.

Cutter Anti-Swine Erysipelas Serum

Mouse-protection tested against a known standard highly potent serum.

100 cc., $2.00 less 10%. 250 cc., $4.00 less 10%. Immunizing dose 5 cc. to 20 cc. depending on weight.

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A viable pigeon-tested vaccine (available only in those states where "simultaneous" erysipelas immunization is authorized).

15 cc., $1.50 less 10%. Dose ¼ to 1 cc. depending on weight.

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An' Related Topics

The Price of Social Disunion

The NAA—Nazi Agricultural Administration

—*From Tale of a City*

Should Have Paged Lancisi*

A Nebraska farmer, owner of 11 mangy cattle out of a total of 600, needed some gadgets weighing less than two pounds to fix his dipping vats but the local hardware store couldn't sell them without an order from the WPB. It took fourteen days to get the order through. Meanwhile, 410 of his cattle were mangy and the country lost tons of beef, an antibureaucracy politician declares. The question is not how to unravel red tape nor how many tons of beef scabies can take out of 600 cattle in fourteen days, but why the farmer didn't hire a veterinarian to tell him to isolate the 11 head. We recall a quack horse doctor who let a horse die of hemorrhage from the palatine artery while a boy was sent to the stockyards to get some pig's dung, the only styptic he knew.

*Often called the father of isolation as a means of stopping the spread of contagious diseases.

Language

Hats off to language, the only conventionalized system of grunts, called words, about which everybody knows everything! How unnecessary it should be to write articles on writing! When everybody knows everything, there is no one at school and nothing to teach. And yet, what a temptation to throw stones from flimsy shacks! But, the tune we started to toot is about casting stones from glass houses in G minor (or something), a pastime we have never learned to play—may we never play.

The Hired Hand

Among the hallucinations of this momentous hour is the imaginary discovery of the "hired hand." He's making the headlines for the first time in American history, although he who is a "hired hand" *en permanence* is nearly as rare as wisdom teeth in barnyard hens. There is no such permanent occupation. Working on the farm by the month or by the year is, and always has been, an avocation—a springboard to renter, to owner, to industrial worker, or to something else but.

We know it's tough to give up the oversize belt which the "hired hand" is supposed to keep tight. So the proposed bill in the Congress providing for the re-drafting of "hired hands" in the Army and Navy back to the farm whence they came is a natural, a big idea. Girths shall not get flatter, cost what it may to preserve diameters.

But, imagine the "hired hand" leaving his fifty a month, "boardin' an' lodgin' an' washin' " throw'd in, hurrying back to the plow so the dimensions of bay windows will not shrink. Oh, boy, what a dream!

Italy! Home of Padua! Where goest thou? In other words, watinel are you up to?

Note the extremely minute particles of silver oxide in

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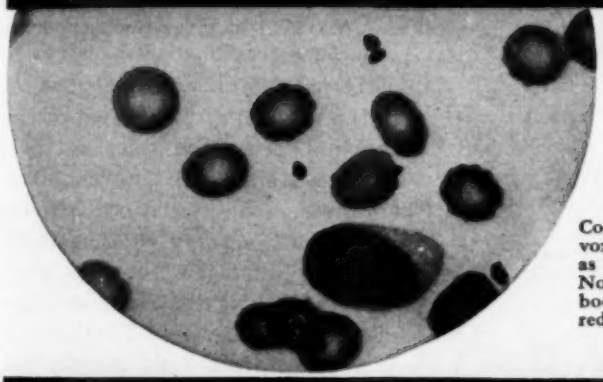

Comparative size of average Novoxil particles and red corpuscles, as seen under the microscope. Novoxil particles (smaller dark bodies) are about ⅛ the size of red blood corpuscles.

. . . which facilitates penetration and dispersion throughout the affected area

For treatment of CHRONIC MASTITIS

The three important steps veterinarians are using to cure Chronic Mastitis caused by *Streptococcus agalactiae* are: (1) Early and accurate diagnosis, (2) Recommendation to dairymen of the practice of a rigid Sanitation Control Program, day in and day out, and (3) Treatment of infected cows with Novoxil* Liquid, a specially prepared active silver oxide diffused in oil—an effective bactericidal agent.

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SMALL ANIMAL veterinarian assistant, excellent opportunity. Write details regarding experience. Groth's Animal Hospital, 2600 S. El Camino Real, San Mateo, Calif.

GRADUATE VETERINARIAN, unmarried, with car, to work on share basis with opportunity to take over one of the best fields in California. J. F. Claire, Tracy, Calif.

POSITION as assistant in large animal or mixed practice. Michigan or New York preferred, but will go anywhere. Draft deferred. 1939 graduate. Address "GR," c/o Journal of the AVMA.

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TO BUY predominantly small animal practice on percentage basis, by 1941 graduate. Address "WR," c/o Journal of AVMA.

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Eight-room home and dog and cat hospital under same roof. 1942 cash business over $15,000. Price $27,500, with $10,000 cash, balance $200 per month. Reason for selling, wish to retire. W. C. Bateman, 127 Base Line, San Bernardino, Calif.

Practices, Locations and partnerships furnished and sold—all states. F. V. Kniest, 1537 S. 29th St., Omaha, Neb.

Books and Magazines

WORLD MAP OF DOGS—Unique, Educational; 19" x 24"; $1.00 each (3 for $2). Also Chart of All American Breeds, same size, same price. A complete American work on dogs. *Judy's Dog Encyclopedia*, with supplements, $5. Judy Publishing Co., 3323 Michigan Blvd., Chicago, Ill.

PARD
DEHYDRATED
SWIFT'S DOG FOOD

The sale of War Bonds and Stamps is the barometer of American morale, of the spirit of '43.

An' Related Topics

Stop Harmful Things at the Start

When Plutarch wrote the life of Julius Caesar[1] he admonished:

> No beginnings of things, however small, are to be neglected; because continuance makes them great; and the very contempt they are held in gives them opportunity to gain that strength which cannot be resisted.

This passage in a great book explains why the veterinary profession of the United States and other countries get drawn into situations from which they cannot extricate themselves. The honest operation of veterinary science tramps on toes that seek to destroy it—the toes of the commercial-minded who kick what they consider a nuisance out of the way. That's you, Doctor, you never protest until it's too late. You couldn't do effective protesting because you didn't join the AVMA. So, there!

[1]Plutarch Lives by John and William Langhorse, stereotyped edition, Porter and Coates, Philadelphia, 1877, page 462.

Off Limits

Although of military origin *off limits* applies to all human undertakings. It means trekking beyond one's moral or legal domain, and it represents an age-old law of behavior written into the Lord's Prayer and several of the Proverbs, *q.v.:*

> As a bird that wandereth from her nest,
> So is the man that wandereth from his place (Prov. 28:8)
> But they have set at nought my counsel,
> And would none of my reproof. (Prov. *1*:25).
> I will also laugh; in the day of your calamity
> I will mock when your fear cometh. (*Ibid.* 26).

Trespassers into the field of veterinary medicine in these days of rationing, please notice.

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BELIEVE ME,

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Toxicity is clinically negligible. Canine 'Crystoids' Anthelmintic may be administered with complete safety and confidence.

Supplied in: Single-vial package (1 vial of 5 pills each); Six-vial package (6 vials of 5 pills each); Twenty-vial package (20 vials of 5 pills each); "Hospital" package (100 vials of 5 pills each). Sharp & Dohme, Veterinary Department, Philadelphia, Pa.

CANINE 'CRYSTOIDS' ANTHELMINTIC

Antiseptigen

Equal to Phenol as Germicide

Non-Toxic
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Pint—$0.80
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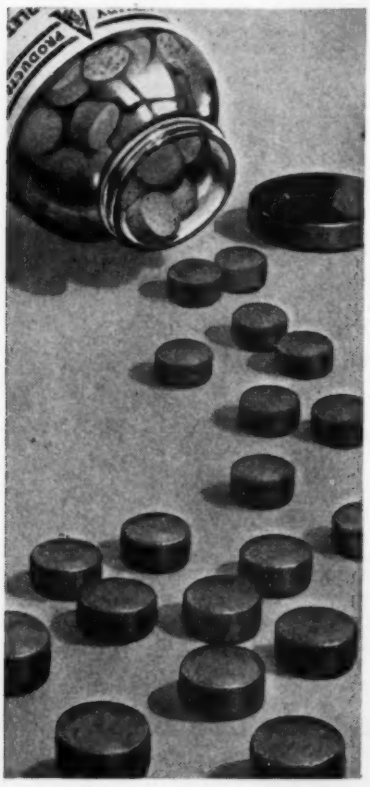
An' Related Topics

Government and Municipal Ownership

The very evident hook-up of politics with the criminal and half-good element is the fruit of public indifference, a lot of stupidity, and the desire to have things that way on the part of the politicians and the underworld. Were the everyday necessities of life in the hands of the voters, guarding good government would be as natural as grooming the front yard, keeping up the furnace, or repairing leaks in the roof. Examples: the U. S. Mail and Public Health services, the Army and the Navy. The Department of Water of Chicago is the only public service in that city of which there has never been a word of complaint. Reason: Meddling politicians would be kicked out. Democracy is a wonderful thing, but it's not put to work. "As is," we leave the management of everyday needs to the mercy of exploiters disguised as libertarians. "What fools we mortals be."



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An' Related Topics

Earn Army-Navy "E"

Sharp and Dohme, pioneers in the development of dried blood plasma banks, and producers of many biological and medicinal products known to the veterinary profession, were awarded the Army-Navy "E," emblem of efficiency. Both the biological and pharmaceutical laboratories received the award.

Science in War and Peace

The impression that war stimulates scientific research is erroneously entertained. The worth-while scientific discoveries and epoch-making inventions are of peacetime origin, not of war, and the warriors use the fine discoveries and inventions to kill, not to improve, man's blessings. Harvey, Jenner, Pasteur, Lister, Koch, Stevenson, Watt, Fulton, Whitney, Morse, Bell, Edison, and the Wright brothers were not military men, and it's no fault of theirs that the fruits of their fertile minds are used in the business of man-killing.

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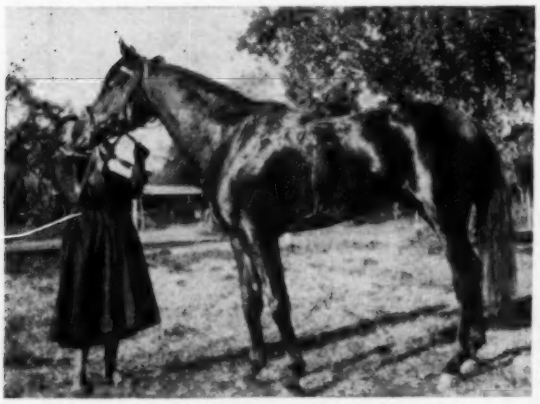
An' Related Topics



Anglo-Arabian, native-bred horse of French Morocco, photographed at the Kenitra, Morocco racetrack by M. Panisset, Assistant-Ddirector of Studies, Ecole de Médecine Vétériniaire, Université de Montréal.

If war comes to the United States, dimouts are suggested instead of blackouts. Nothing is more depressing to morale than blackouts, the advocates of dimouts assert.

Army-Navy "E" Awarded

On Feb. 26, 1943, the Army-Navy "E" was awarded to 2,700 employees of Parke, Davis & Company of Detroit, Mich., for excellence in production of materials for saving lives. "E" flags are flying in each of the company's branches and depots in the United States and "E" pins have been sent to all employees in this country.

Ode to the Debtor*

You need your money and I need mine,
If we both get ours, it will sure be fine;
But, if you get yours and keep mine, too,
What in the world am I going to do?

—Chas. Haasje, Shelby, Mich.

A good way to lose the war is to keep on growling about rubber tires and motor fuel.

*Excerpt from an unpublished address delivered at the seventy-ninth annual meeting of the American Veterinary Medical Association, Chicago, Aug. 24-27, 1942.

ANNOUNCING

1943 AVMA MEMBERSHIP DIRECTORY

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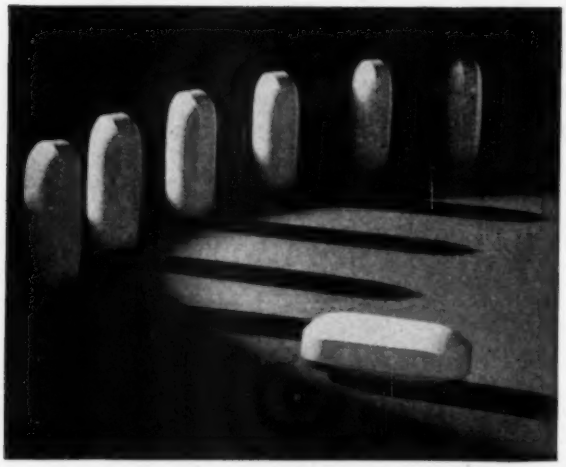
An' Related Topics

Translating

In this narrowing world, translating has become a thing of importance in both commercial and scientific work which reminds us that the job of the translator is difficult and generally bad when done without sufficient knowledge of the two languages concerned. On the one hand, the translator has to keep his language from getting mixed up with the author's and on the other, he ought to retain the beauty of his own rhetoric.

Translating is a three-way hazard — author, translator, reader — which can be avoided only through experience in conversation. Similarities in the structure of the two languages in hand and the expressions peculiar to each (idioms) have to be retained. Better learn the jabber and jargon before starting to translate, for translating is learned in the school of talking, not in the academy.



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An' Related Topics

Linguistic Science of '43

There is a branch of knowledge about which everybody knows everything.—*Lykel.* Its name is language.

* * *

Current linguistic science flourishes on the college campus. There everything and everybody has a nickname.

* * *

Because the average man/woman wants to talk like the other fellow/dame, the notion that correct speech is snobbish roots deep. (Now don't say this should be deeply.)

* * *

Modern jargon is not of the old grammar but of the manner of mixing new ingredients. As of 1943, speech is to words what sausage is to pork—an amorphous mixture.

* * *

And, believe it or not, cyclonic violence is a gentle breeze alongside a storm aroused by literary criticism.

* * *

Now, to stay out a' stir, I'm packin' a rod an' takin' it on d'lam. S'long.—*Monsieur W. A. T. Inelle.*

The Cost of World War II

For munitions and other ordnance and war construction, the United States will have spent 157 billion dollars up to the end of 1943, provided current price levels do not change. This is 78 billion dollars less than the 235 billion dollar estimated total cost of the war, had prices been allowed to run riot as in World War I. Thus, that much-hated price fixing that nailed Price Administrator Henderson to the cross will save around 78 billion to taxpapers.—*From the OPA, Feb. 5, 1943.*

Speaking to co-diners, we overheard a veterinarian at the next table say "What good is the association to me?" As long as that question is asked, our job's not done. Educating the public is putting the cart before the horse while such men live. Our own personnel need the educating.

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